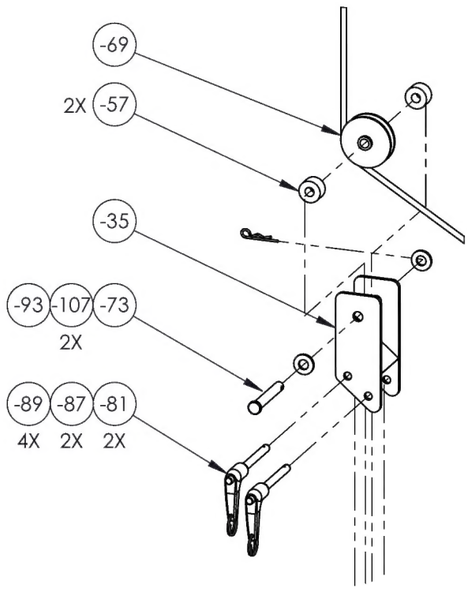
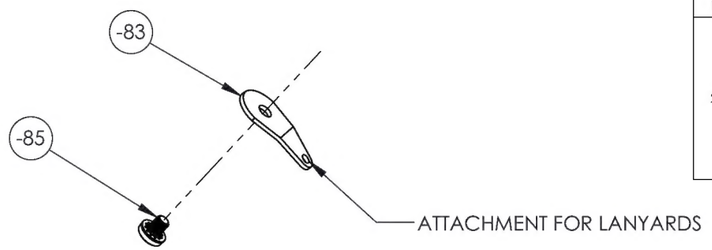
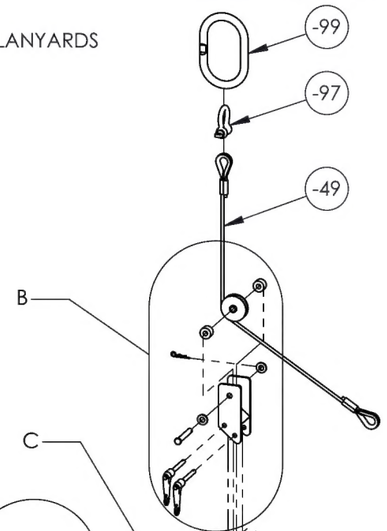
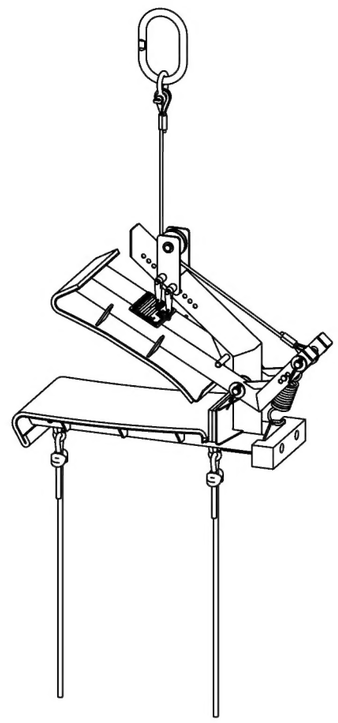
REVISIONS					
REV	ECR	DESCRIPTION	DATE	INITIAL	APPROVED
1		RELEASED FOR PRODUCTION.	4/13/2016	DPD	JAG
2	16-0147	ADDED NOTE 4 . **-1** CH'D DIM WAS 2X 8.38 IS 2X 8.00. **-5** CH'D DIMS WAS Ø.526-.531 THRU ALL S.F. -79 IS Ø.516-.521 THRU ALL (S.F.-79), WAS 15.42 IS 15.04. **-17** ADDED DIM (.97). CH'D DIM WAS 2X 5.65 IS 5.62. ADDED HIDDEN LINES REMOVED NOTE. **-21** CH'D DIMS WAS 16.64 IS 16.61, WAS 15.4 IS 15.3. **-23** CH'D DIM WAS Ø.526-.531 THRU ALL S.F. -79 IS Ø.516-.521 THRU ALL (S.F. -79). **-35** CH'D DIM WAS .800 +.010-.000 IS 2X .800 +.010-.000. **-37** CH'D DIMS WAS .57 IS .76, WAS Ø.275-.280 THRU ALL S.F. -73 IS Ø.338-.343 THRU ALL (S.F. -73). **-47** ADDED DIM 2X R.13. **-55** CH'D B/O REF WAS #3790T13 IS #38381751. **-57** CH'D B/O REF WAS #92320A708 IS #92320A728. CH'D DIMS WAS (Ø.625) IS (Ø.750), WAS (Ø.252 +.010-.000) IS (Ø.315 +.010-.000), WAS .537 IS .467. **-67** CH'D B/O REF WAS #3079T34 IS #9079T33. **-69** CH'D B/O REF WAS MS24566-3B IS #MS20220A1, CH'D MAT'L WAS STEEL IS ALUMINUM. **-71** CH'D QTY WAS 3 IS 1. **-73** CH'D B/O REF WAS #93890A431 IS #97245A308. **-77** CH'D B/O REF WAS #7814K15 IS #90295A494, CH'D MAT'L WAS BROZE IS NYLON. **-93** CH'D QTY WAS 1 IS 2. **-101** CH'D B/O REF WAS #90128946 IS #90128A946. **-107** ADDED TO BOM QTY 2.	9/13/2016	DPD	SM

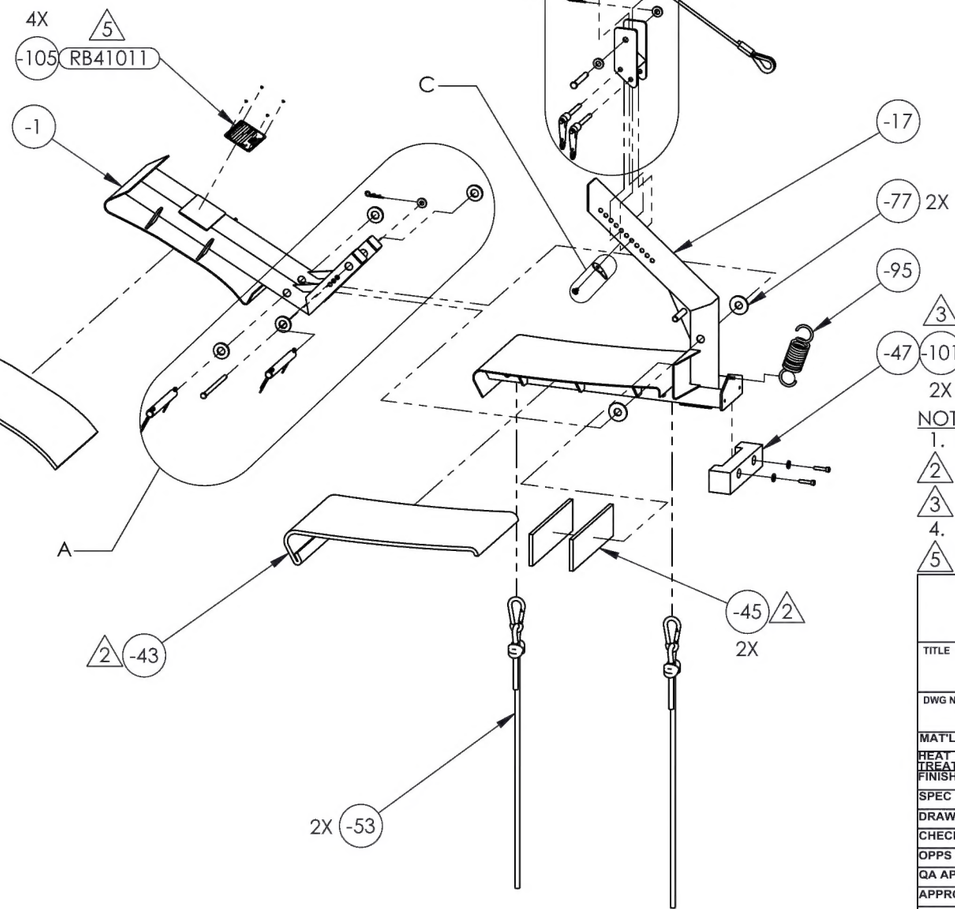




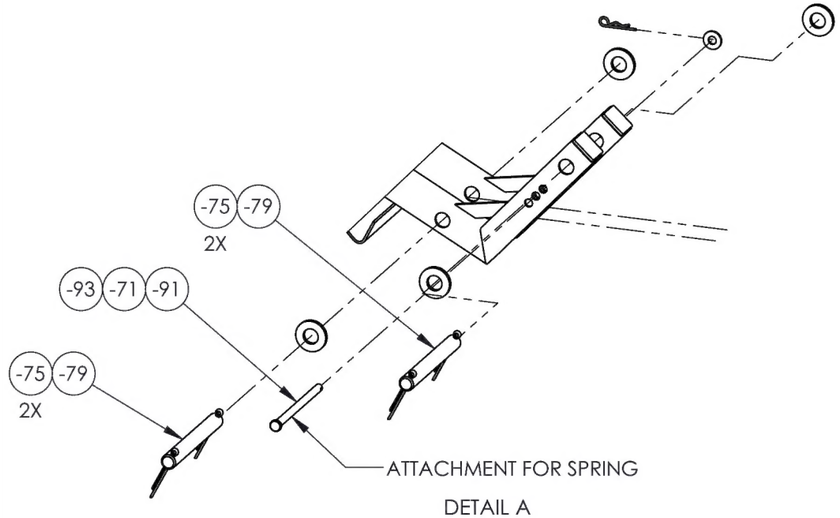
DETAIL C
SCALE 1 : 2







DETAIL B
SCALE 1 : 5



DETAIL A
SCALE 1 : 5

NOTES:
1. REF. EUROCOPTER T/N: M621V1006101.
2 ATTACH WITH APPROPRIATE ADHESIVE.
3 USE LOCTITE ON THREADS.
4. MAX WORKING LOAD 60 Kg.
5 ENGRAVE T/N, S/N, SWL 60 Kg., "MADE IN USA".

DART AEROSPACE

TITLE: MRB SLING

DWG NO.: RBEM621V1006101 | REV: 2

MAT'L	
HEAT TREAT	
FINISH	
SPEC	
DRAWN BY:	DUERFELDT
CHECKED:	CLOUGH
OPPS APPR:	ANDERSON
QA APPR:	LINDSAY
APPROVED:	GILBERT

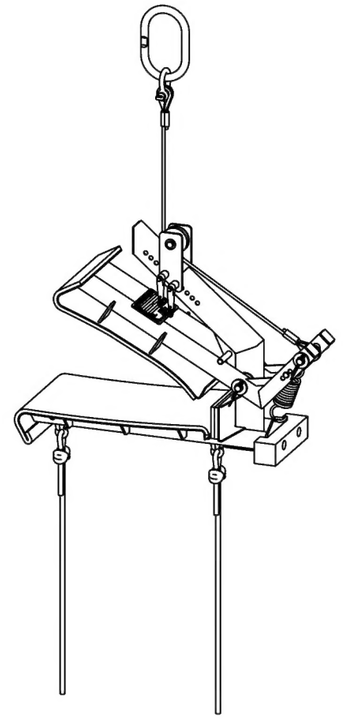
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
.XXX ± .005 FRACTIONS ± 1/8
.XX ± .01 ANGLES ±.5°
.X ± .1 SURFACES = 125
1. BREAK ALL SHARP EDGES .015 x 45° OR .015R
2. DIMENSIONAL LIMITS APPLY AFTER PLATING
3. INTERPRET DIM AND TOL PER ASME Y14.5M-2009

USED ON MODEL: H175

SCALE 1:10 | DATE 3/3/2016 | SHEET 1 OF 30

REVISIONS					
REV	ECR	DESCRIPTION	DATE	INITIAL	APPROVED

ASSY QTY	ASSY QTY	ASSY QTY	ASSY QTY	ASSY QTY	B/O	Part #	UNIT QTY	Description	Material	B/O INFORMATION OR SPECIFICATIONS	PG.
				X		-1	1	TOP WELDMENT			3
				1		-3		TOP CLAMP	A36/1018/1020 HR		4
				2		-5		TOP LONG TUBE	STEEL TUBE		5
				2		-7		TOP SHORT TUBE	STEEL TUBE		6
				2		-9		TUBE CAP	A36/1018/1020 HR		7
				2		-11		TOP TUBE TO TUBE BRACE	A36/1018/1020 HR		8
			6	4		-13		CLAMP TO TUBE BRACE	A36/1018/1020 HR		9
			1	1		-15		RECTANGLE TUBE BRACE	A36/1018/1020 HR		10
			X			-17	1	BOTTOM WELDMENT			11
			1			-19		BOTTOM CLAMP	A36/1018/1020 HR		12
			2			-21		BOTTOM TUBE	STEEL TUBE		13
			1			-23		BOTTOM UPRIGHT TUBE	STEEL TUBE		14
			1			-25		BOTTOM ANGLE TUBE	STEEL TUBE		15
			1			-27		BOTTOM SPRING ANCHOR PLATE	A36/1018/1020 HR		16
			1			-29		STOP GUSSET	A36/1018/1020 HR		17
			1			-31		BOTTOM UPRIGHT SUPPORT	A36/1018/1020 HR		18
			1			-33		LARGE TUBE CAP	A36/1018/1020 HR		19
		X				-35	1	LIFTING BLOCK WELDMENT			20
		2				-37		LIFTING BLOCK PLATE	1018/1020 CR		21
		1				-39		LIFTING BLOCK SPACER	1018/1020 CR		22
						-41	1	TOP CLAMP PAD	NEOPRENE/EPDM/SBR FOAM	1/4 X 42 WIDE, SOFT (MCMASTER-CARR #8647K33) MODIFIED	23
						-43	1	BOTTOM CLAMP PAD	NEOPRENE/EPDM/SBR FOAM	1/4 X 42 WIDE, SOFT (MCMASTER-CARR #8647K33) MODIFIED	24
						-45	2	BACK FOAM PAD	NEOPRENE/EPDM/SBR FOAM	1/4 X 42 WIDE, SOFT (MCMASTER-CARR #8647K33) MODIFIED	25
						-47	1	REAR BUMPER	URETHANE, 60A	(MCMASTER-CARR #8644K24) MODIFIED	26
	X					-49	1	LIFTING CABLE ASSEMBLY			27
	1					-51		LIFTING CABLE	STEEL	Ø3/16, 6 X 19, 760 LBS CAPACITY (MCMASTER-CARR #3440T55) MODIFIED	27
X						-53	2	ROPE & CARABINER ASSEMBLY			28
1						-55		ROPE	ARAMID	Ø5/16 (MCMASTER-CARR #3838T751) MODIFIED	28
						-57	2	SPACER	S.S.	Ø5/16 I.D. X Ø3/4 O.D. X 5/8 (MCMASTER CARR #92320A728) MODIFIED	29
			1		B/O	-59		DOWEL PIN	STEEL	Ø3/8 X 3-1/2 (MCMASTER-CARR #98381A638)	11
			2		B/O	-61		DOWEL PIN	STEEL	Ø5/16 X 3-1/2 (MCMASTER-CARR #98381A598)	11
	2				B/O	-63		LIFTING THIMBLE	STEEL	11/16 X 1-5/16, Ø3/16 CABLE (MCMASTER-CARR #3494T12)	27
	2				B/O	-65		LIFTING OVAL SLEEVE	S.S.	Ø3/16 ROPE X 1 (MCMASTER-CARR #3755T17)	27
1					B/O	-67		CARABINER	STEEL	Ø5/16 THICK X Ø1/2 X 2-1/2, 3/8 OPENING (MCMASTER-CARR #3079T33)	28
					B/O	-69	1	PULLEY	ALUMINUM	Ø1.755 O.D. X Ø1.255 GROOVE, Ø3/16 CABLE (MS20220A1)	1
					B/O	-71	1	WASHER	S.S.	Ø1/4 (MCMASTER-CARR #92141A029)	1
					B/O	-73	1	CLEVIS PIN	STEEL	Ø5/16 X 2 USABLE (MCMASTER-CARR #97245A308)	1
					B/O	-75	4	WASHER	STEEL	Ø1/2 (MCMASTER-CARR #98023A033)	1
					B/O	-77	2	THRUST BEARING	NYLON	Ø1/2 I.D. X Ø1.25 O.D. X .093-.107 (MCMASTER-CARR #90295A494)	1
					B/O	-79	2	HEADLESS CLEVIS PIN	STEEL	Ø1/2 X 4 USABLE (MCMASTER-CARR #93890A499)	1
					B/O	-81	2	L HANDLE BALL LOCK PIN	S.S.	Ø1/4 X 2 USABLE (MCMASTER-CARR #90302A114)	1
					B/O	-83	1	LANYARD TAB	ALUMINUM	#10 (CARR-LANE #CL-.194-TAB-A)	1
					B/O	-85	1	PAN HEAD MACHINE SCREW	STEEL	10-32 X 1/4 (MCMASTER-CARR #90403A823)	1
					B/O	-87	2	LANYARD	COATED STEEL	Ø1/16 X 12 (CARR LANE #CL-2-C)	1
					B/O	-89	4	FERRULE	ALUMINUM	Ø1/16 X 3/8 (MCMASTER-CARR #3896T31)	1
					B/O	-91	1	CLEVIS PIN	S.S.	Ø1/4 X 3-13/16 USABLE (MCMASTER-CARR #92390A184)	1
					B/O	-93	2	HAIR PIN	S.S.	Ø1/4 - Ø1/2 PIN, Ø1/16 WIRE (MCMASTER-CARR #92391A120)	1
					B/O	-95	1	EXTENSION SPRING	S.S.	Ø.148 WIRE X Ø1.25 O.D. X 4, 37 LBS/IN (CENTURY SPRING #81130S)	1
					B/O	-97	1	SHACKLE	STEEL	Ø5/16, 1500 WLL (MCMASTER-CARR #3558T46)	1
					B/O	-99	1	OBLONG RING	S.S.	Ø1/2 X 2-3/8 X 4-1/4 (MCMASTER-CARR #30765T85)	1
					B/O	-101	2	SOCKET HEAD CAP SCREW	STEEL	#10-32 X 7/8 (MCMASTER-CARR #90128A946)	1
					B/O	-103	2	WASHER	STEEL	#10 (MCMASTER-CARR #98023A114)	1
					B/O	-105	4	#2 DRIVE SCREW	COATED STEEL	#2 X 1/8 (MCMASTER-CARR #90081A074)	1
					B/O	-107	2	WASHER	STEEL	Ø5/16 (MCMASTER-CARR #98023A030)	1
					B/O		1	DART PLACARD	ALUMINUM	RB41011	1
ASSY -53	ASSY -49	ASSY -35	ASSY -17	ASSY -1							



DART AEROSPACE

TITLE: MRB SLING

DWG NO.: RBEM621V1006101 | REV: 2

MAT'L:
HEAT TREAT:
FINISH:
SPEC:

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
.XXX ± .005 FRACTIONS ± 1/8
.XX ± .01 ANGLES ±.5°
.X ± .1 SURFACES = 125

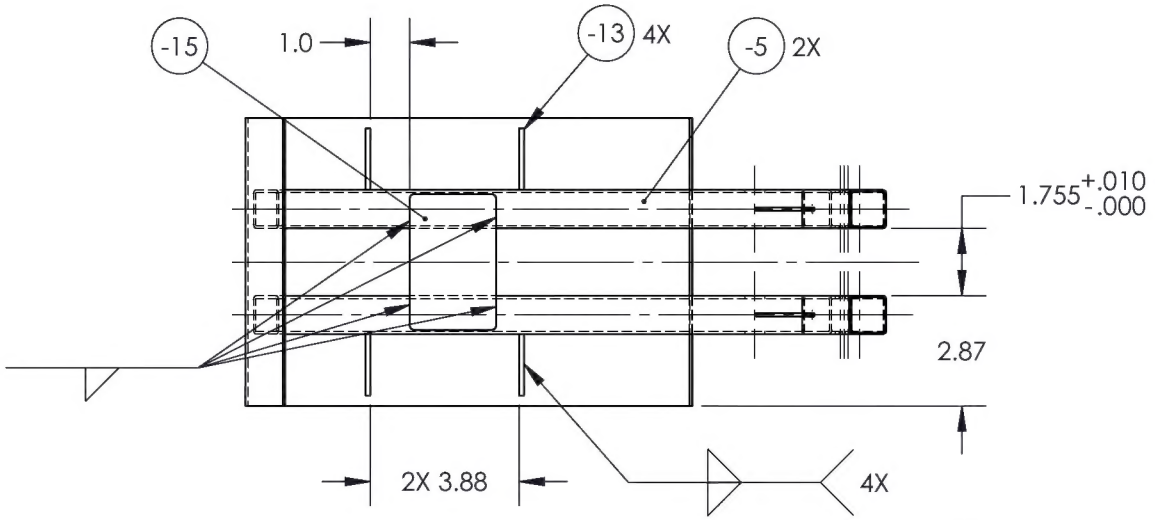
1. BREAK ALL SHARP EDGES .015 x 45° OR .015R
2. DIMENSIONAL LIMITS APPLY AFTER PLATING
3. INTERPRET DIM AND TOL PER ASME Y14.5M-2009

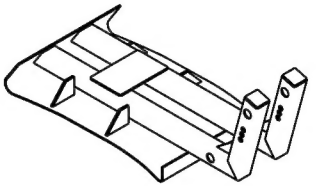
DRAWN BY:	DUERFELDT
CHECKED:	CLOUGH
OPPS APPR:	ANDERSON
QA APPR:	LINDSAY
APPROVED:	GILBERT

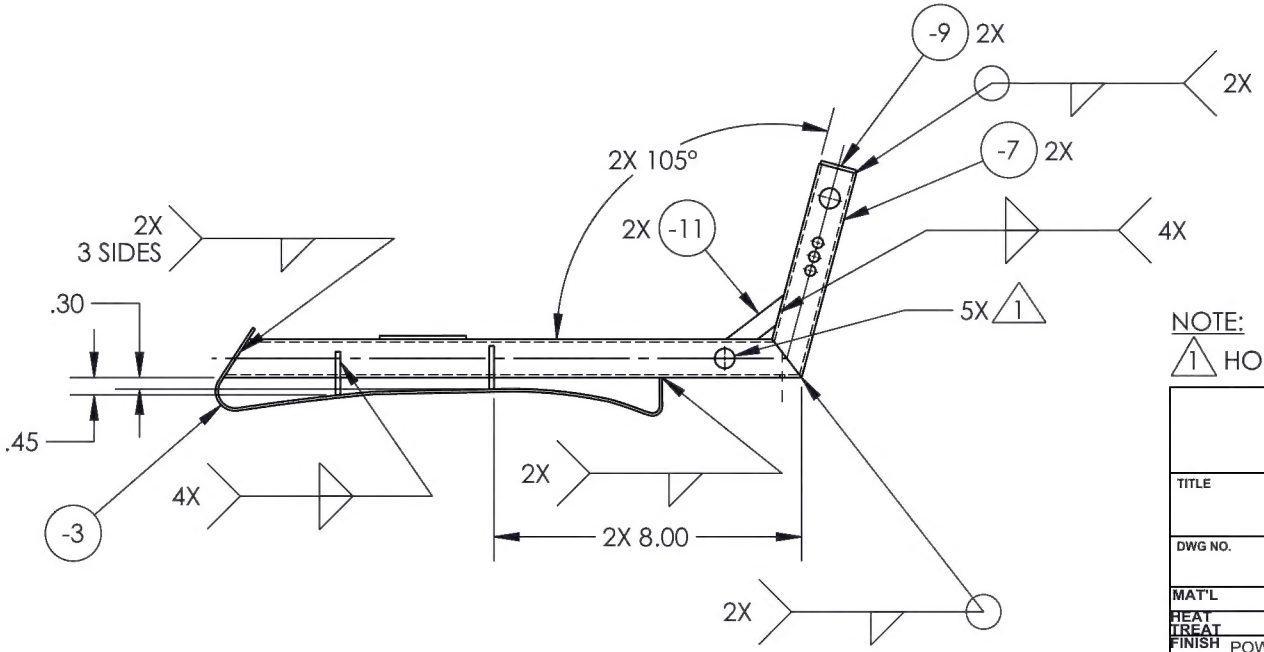
USED ON MODEL: H175

SCALE: 1:10 | DATE: 3/3/2016 | SHEET 2 OF 30

REVISIONS					
REV	ECR	DESCRIPTION	DATE	INITIAL	APPROVED
2	16-0147	**-1** CH'D DIM WAS 2X 8.38 IS 2X 8.00.	9/13/2016	DPD	JAG







-1

TOP WELDMENT

NOTE:

1 HOLES MUST ALIGN.

DART AEROSPACE

TITLE: MRB SLING

DWG NO. RBEM621V1006101-1 REV. 2

MAT'L	
HEAT TREAT	
FINISH	POWDER COAT YELLOW
SPEC	FED #13538
DRAWN BY:	DUERFELDT
CHECKED:	CLOUGH
OPPS APPR:	ANDERSON
QA APPR:	LINDSAY
APPROVED:	GILBERT

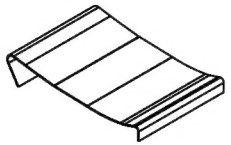
UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
.XXX ± .010 FRACTIONS ± 1/8
.XX ± .03 ANGLES ±1°
.X ± .1 SURFACES = 125

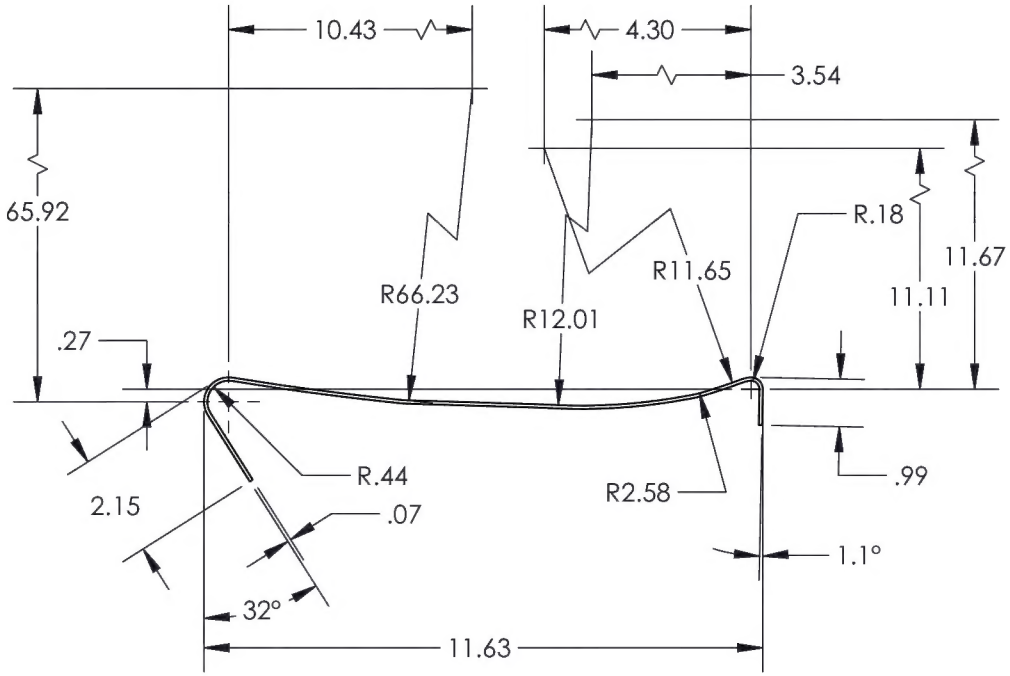
1. BREAK ALL SHARP EDGES .015 x 45° OR .015R
2. DIMENSIONAL LIMITS APPLY AFTER PLATING
3. INTERPRET DIM AND TOL PER ASME Y14.5M-2009

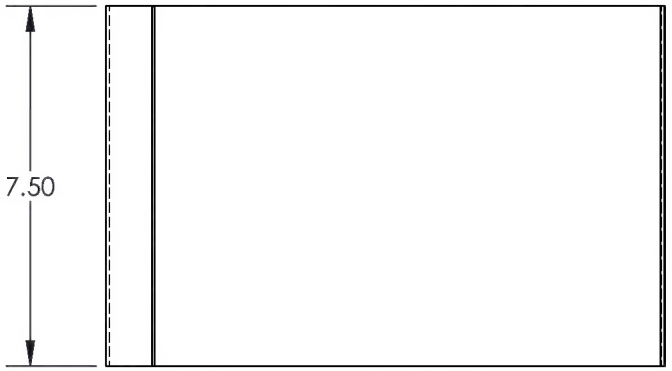
USED ON MODEL: H175

SCALE 1:5 | DATE 3/3/2016 | SHEET 3 OF 30

REVISIONS					
REV	ECR	DESCRIPTION	DATE	INITIAL	APPROVED

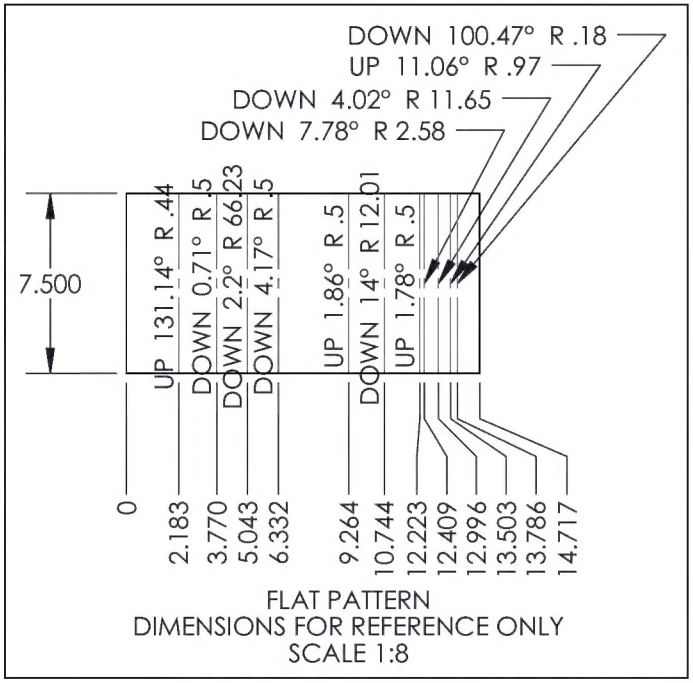






-3

TOP CLAMP



FLAT PATTERN
DIMENSIONS FOR REFERENCE ONLY
SCALE 1:8

DART AEROSPACE

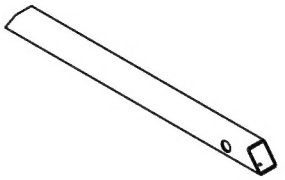
TITLE	MRB SLING
DWG NO.	RBEM621V1006101-3
REV.	2
MAT'L	A36/1018/1020 HR
HEAT TREAT	
FINISH	SEE -1
SPEC	
DRAWN BY:	DUERFELDT
CHECKED:	CLOUGH
OPPS APPR:	ANDERSON
QA APPR:	LINDSAY
APPROVED:	GILBERT
SCALE	1:4
DATE	3/3/2016
SHEET	4 OF 30

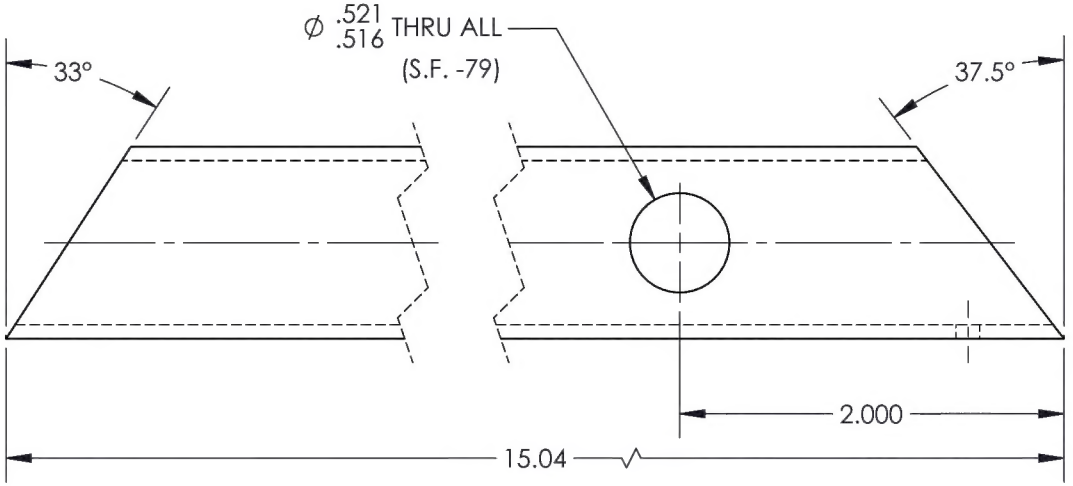
UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
.XXX ± .010 FRACTIONS ± 1/8
.XX ± .03 ANGLES ±1°
.X ± .1 SURFACES = 125

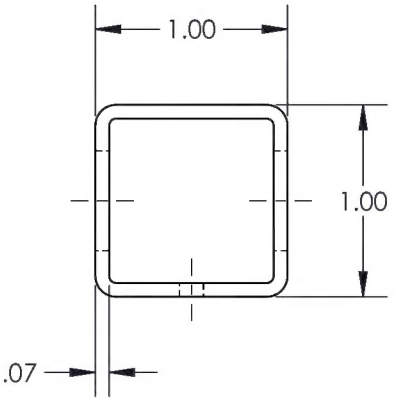
1. BREAK ALL SHARP EDGES .015 x 45° OR .015R
2. DIMENSIONAL LIMITS APPLY AFTER PLATING
3. INTERPRET DIM AND TOL PER ASME Y14.5M-2009

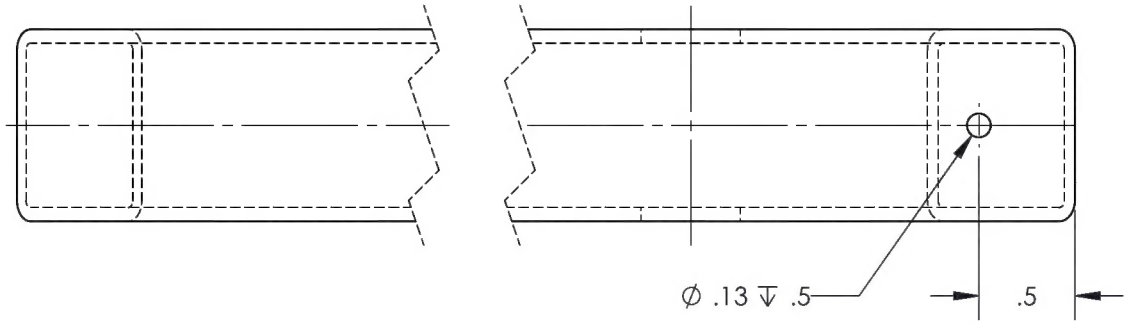
USED ON MODEL
H175

REVISIONS					
REV	ECR	DESCRIPTION	DATE	INITIAL	APPROVED
2	16-0147	**-5** CH'D DIMS WAS Ø.526-.531 THRU ALL S.F. -79 IS Ø.516-.521 THRU ALL (S.F.-79), WAS 15.42 IS 15.04.	9/13/2016	DPD	SM









(-5)

TOP LONG TUBE

DART AEROSPACE

TITLE: MRB SLING

DWG NO. RBEM621V1006101-5 REV. 2

MAT'L	STEEL TUBE
HEAT TREAT	
FINISH	SEE -1
SPEC	
DRAWN BY:	DUERFELDT
CHECKED:	CLOUGH
OPPS APPR:	ANDERSON
QA APPR:	LINDSAY
APPROVED:	GILBERT

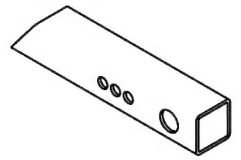
UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
.XXX ± .010 FRACTIONS ± 1/8
.XX ± .03 ANGLES ±1°
.X ± .1 SURFACES = 125

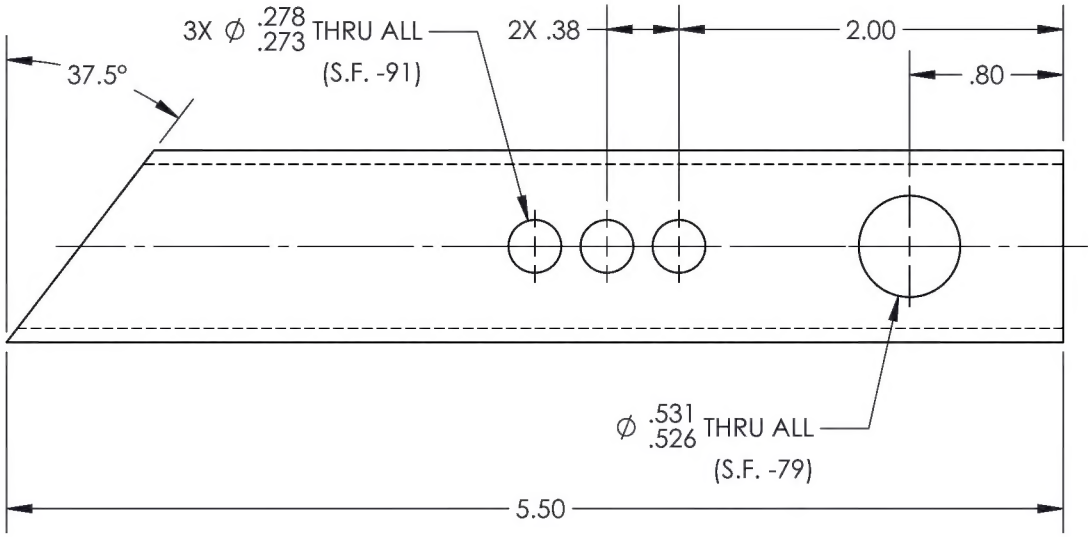
1. BREAK ALL SHARP EDGES .015 x 45° OR .015R
2. DIMENSIONAL LIMITS APPLY AFTER PLATING
3. INTERPRET DIM AND TOL PER ASME Y14.5M-2009

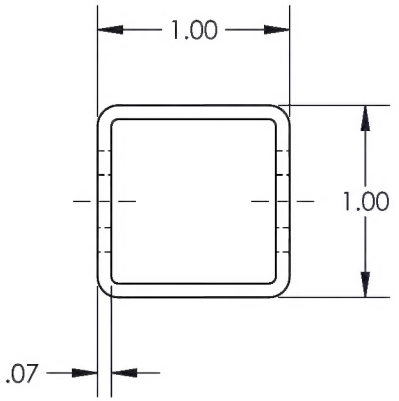
USED ON MODEL: H175

SCALE 1:1 | DATE 3/3/2016 | SHEET 5 OF 30

REVISIONS					
REV	ECR	DESCRIPTION	DATE	INITIAL	APPROVED







-7

TOP SHORT TUBE

DART AEROSPACE

TITLE: MRB SLING

DWG NO. RBEM621V1006101-7 REV. 2

MAT'L	STEEL TUBE
HEAT TREAT	
FINISH	SEE -1
SPEC	
DRAWN BY:	DUERFELDT
CHECKED:	CLOUGH
OPPS APPR:	ANDERSON
QA APPR:	LINDSAY
APPROVED:	GILBERT

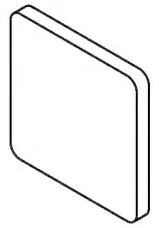
UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
.XXX ± .010 FRACTIONS ± 1/8
.XX ± .03 ANGLES ±1°
.X ± .1 SURFACES = 125

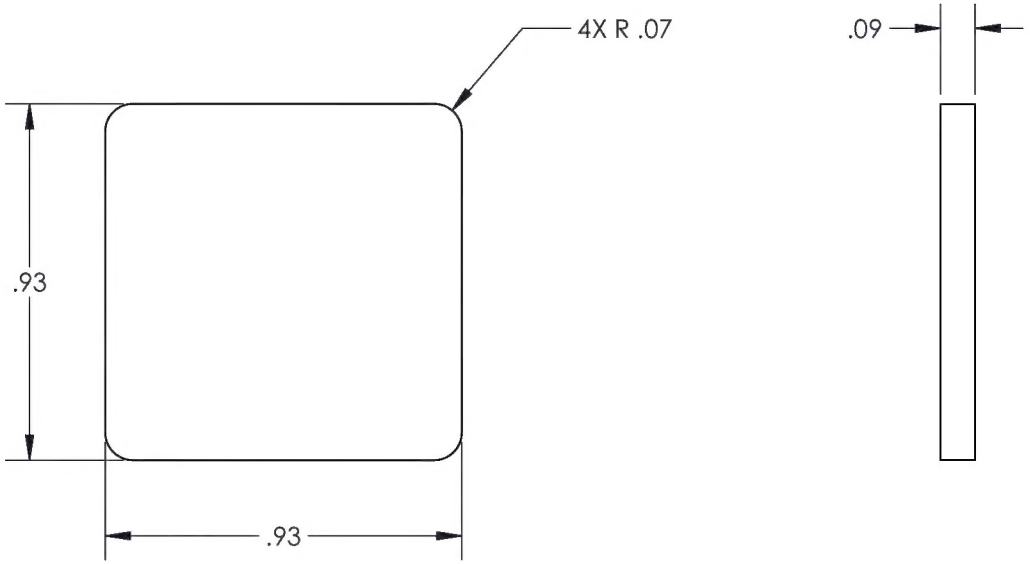
1. BREAK ALL SHARP EDGES .015 x 45° OR .015R
2. DIMENSIONAL LIMITS APPLY AFTER PLATING
3. INTERPRET DIM AND TOL PER ASME Y14.5M-2009

USED ON MODEL: H175

SCALE 1:1 | DATE 3/3/2016 | SHEET 6 OF 30

REVISIONS					
REV	ECR	DESCRIPTION	DATE	INITIAL	APPROVED





-9

TUBE CAP

DART AEROSPACE

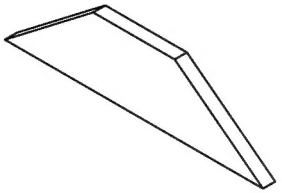
TITLE	MRB SLING
DWG NO.	RBEM621V1006101-9
REV.	2
MAT'L	A36/1018/1020 HR
HEAT TREAT	
FINISH	SEE -1
SPEC	
DRAWN BY:	DUERFELDT
CHECKED:	CLOUGH
OPPS APPR:	ANDERSON
QA APPR:	LINDSAY
APPROVED:	GILBERT
SCALE	2:1
DATE	3/3/2016
SHEET	7 OF 30

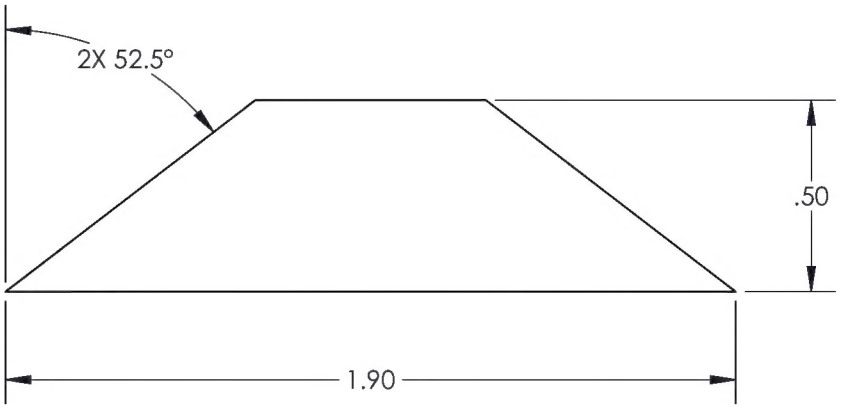
UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
.XXX ± .010 FRACTIONS ± 1/8
.XX ± .03 ANGLES ±1°
.X ± .1 SURFACES = 125

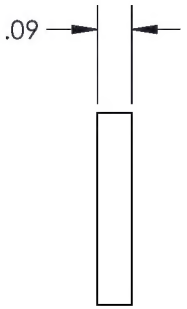
1. BREAK ALL SHARP EDGES .015 x 45° OR .015R
2. DIMENSIONAL LIMITS APPLY AFTER PLATING
3. INTERPRET DIM AND TOL PER ASME Y14.5M-2009

USED ON MODEL
H175

REVISIONS					
REV	ECR	DESCRIPTION	DATE	INITIAL	APPROVED







(-11)

TOP TUBE TO TUBE BRACE

DART AEROSPACE

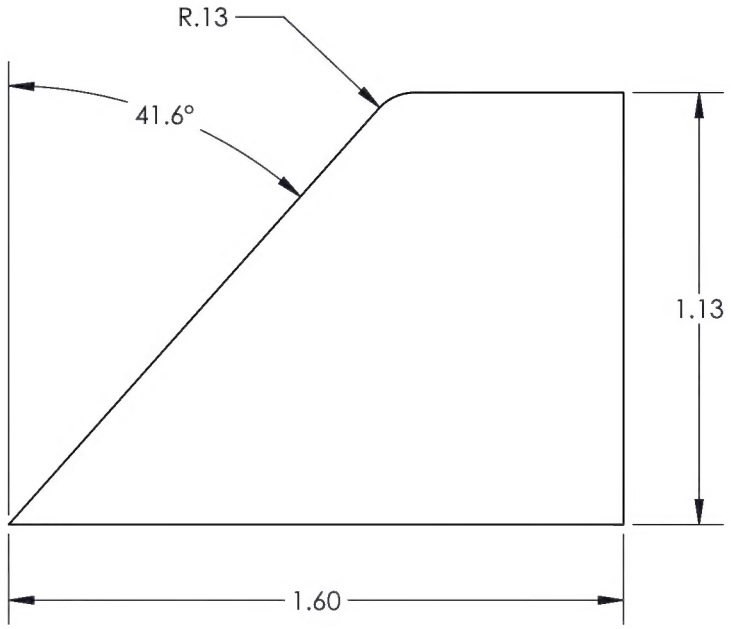
TITLE	MRB SLING
DWG NO.	RBEM621V1006101-11
REV.	2
MAT'L	A36/1018/1020 HR
HEAT TREAT	
FINISH	SEE -1
SPEC	
DRAWN BY:	DUERFELDT
CHECKED:	CLOUGH
OPPS APPR:	ANDERSON
QA APPR:	LINDSAY
APPROVED:	GILBERT
SCALE	2:1
DATE	3/3/2016
SHEET	8 OF 30

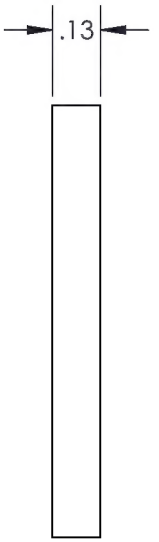
UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
.XXX ± .010 FRACTIONS ± 1/8
.XX ± .03 ANGLES ±1°
.X ± .1 SURFACES = 125

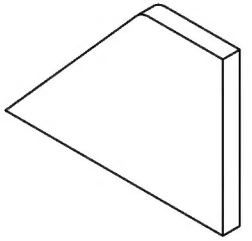
1. BREAK ALL SHARP EDGES .015 x 45° OR .015R
2. DIMENSIONAL LIMITS APPLY AFTER PLATING
3. INTERPRET DIM AND TOL PER ASME Y14.5M-2009

USED ON MODEL
H175

REVISIONS					
REV	ECR	DESCRIPTION	DATE	INITIAL	APPROVED







-13

CLAMP TO TUBE BRACE

DART AEROSPACE

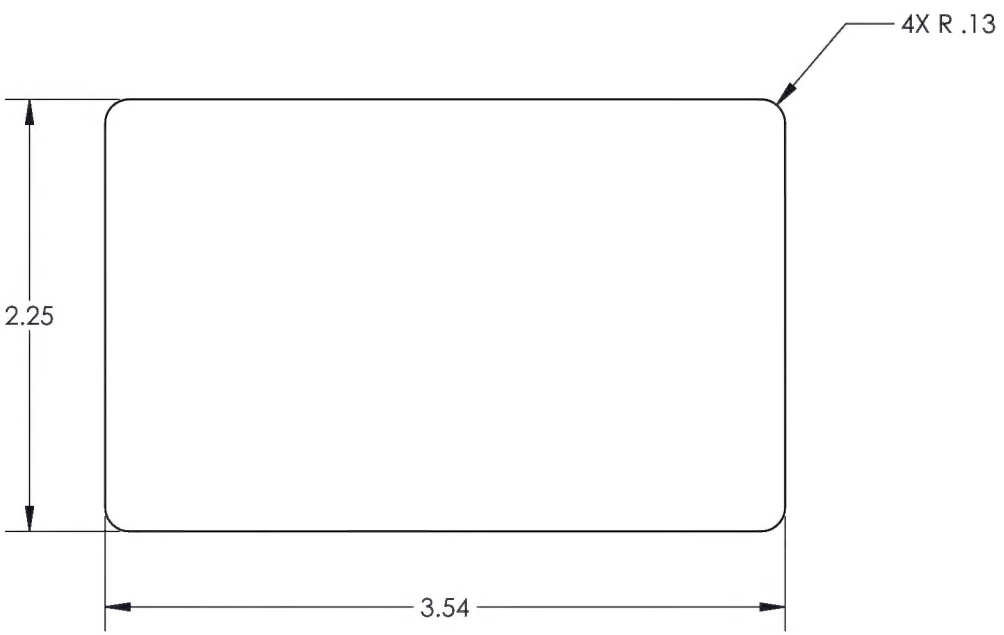
TITLE	MRB SLING
DWG NO.	RBEM621V1006101-13
REV.	2
MAT'L	A36/1018/1020 HR
HEAT TREAT	
FINISH	SEE -1 & -17
SPEC	
DRAWN BY:	DUERFELDT
CHECKED:	CLOUGH
OPPS APPR:	ANDERSON
QA APPR:	LINDSAY
APPROVED:	GILBERT
SCALE	2:1
DATE	3/3/2016
SHEET	9 OF 30

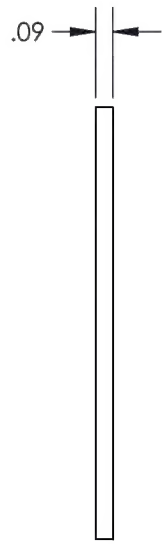
UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
.XXX ± .010 FRACTIONS ± 1/8
.XX ± .03 ANGLES ±1°
.X ± .1 SURFACES = 125

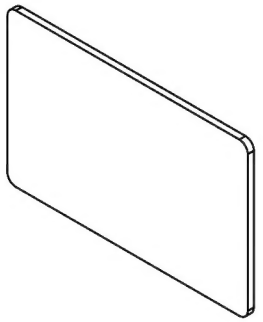
1. BREAK ALL SHARP EDGES .015 x 45° OR .015R
2. DIMENSIONAL LIMITS APPLY AFTER PLATING
3. INTERPRET DIM AND TOL PER ASME Y14.5M-2009

USED ON MODEL
H175

REVISIONS					
REV	ECR	DESCRIPTION	DATE	INITIAL	APPROVED







-15

RECTANGLE TUBE BRACE

DART AEROSPACE

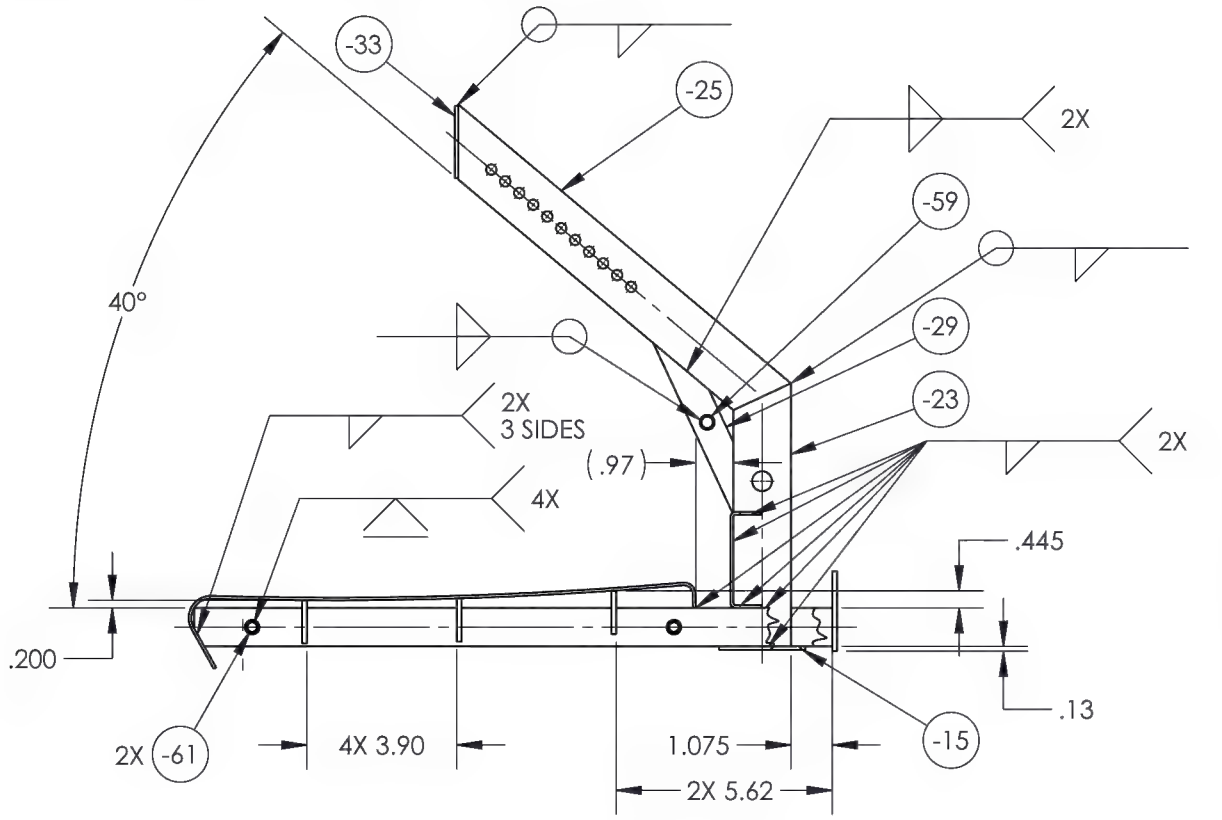
TITLE	MRB SLING
DWG NO.	RBEM621V1006101-15
REV.	2
MAT'L	A36/1018/1020 HR
HEAT TREAT	
FINISH	SEE -1 & -17
SPEC	
DRAWN BY:	DUERFELDT
CHECKED:	CLOUGH
OPPS APPR:	ANDERSON
QA APPR:	LINDSAY
APPROVED:	GILBERT
SCALE	1:1
DATE	3/3/2016
SHEET	10 OF 30

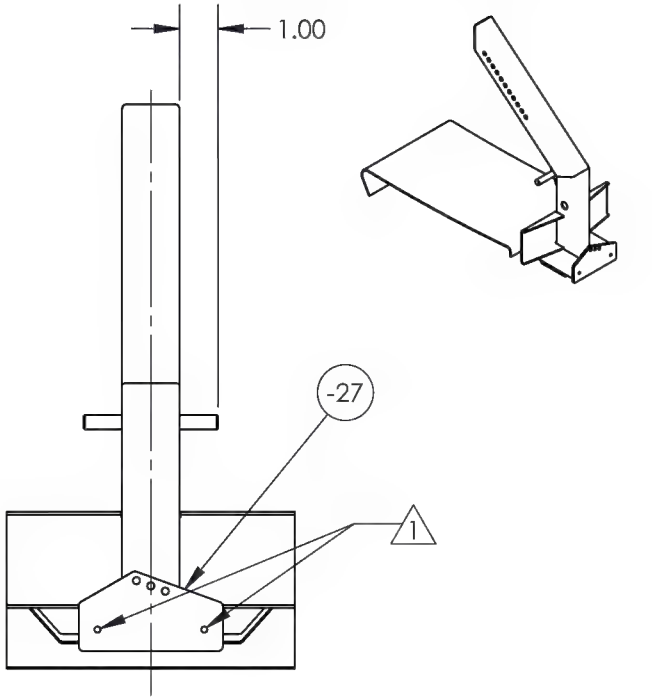
UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
.XXX ± .010 FRACTIONS ± 1/8
.XX ± .03 ANGLES ±1°
.X ± .1 SURFACES = 125

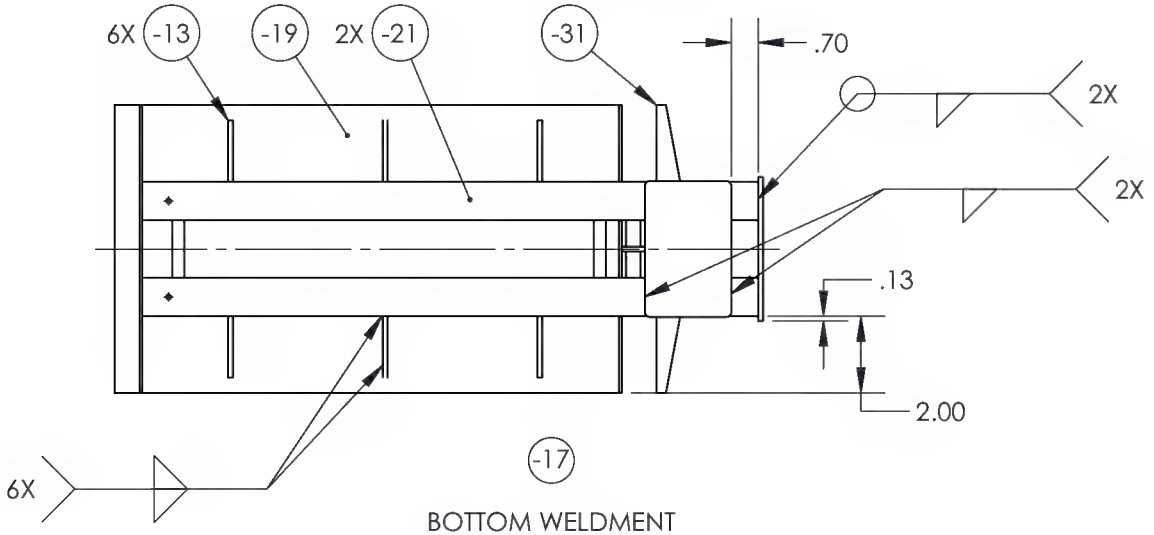
1. BREAK ALL SHARP EDGES .015 x 45° OR .015R
2. DIMENSIONAL LIMITS APPLY AFTER PLATING
3. INTERPRET DIM AND TOL PER ASME Y14.5M-2009

USED ON MODEL
H175

REVISIONS					
REV	ECR	DESCRIPTION	DATE	INITIAL	APPROVED
2	16-0147	**-17** ADDED DIM (.97). CH'D DIM WAS 2X 5.65 IS 5.62. ADDED HIDDEN LINES REMOVED NOTE.	9/13/2016	DPD	SM







BOTTOM WELDMENT

NOTE:

1. NO POWDER COAT IN THREADS.
2. HIDDEN LINES OMITTED FOR CLARITY.

DART AEROSPACE

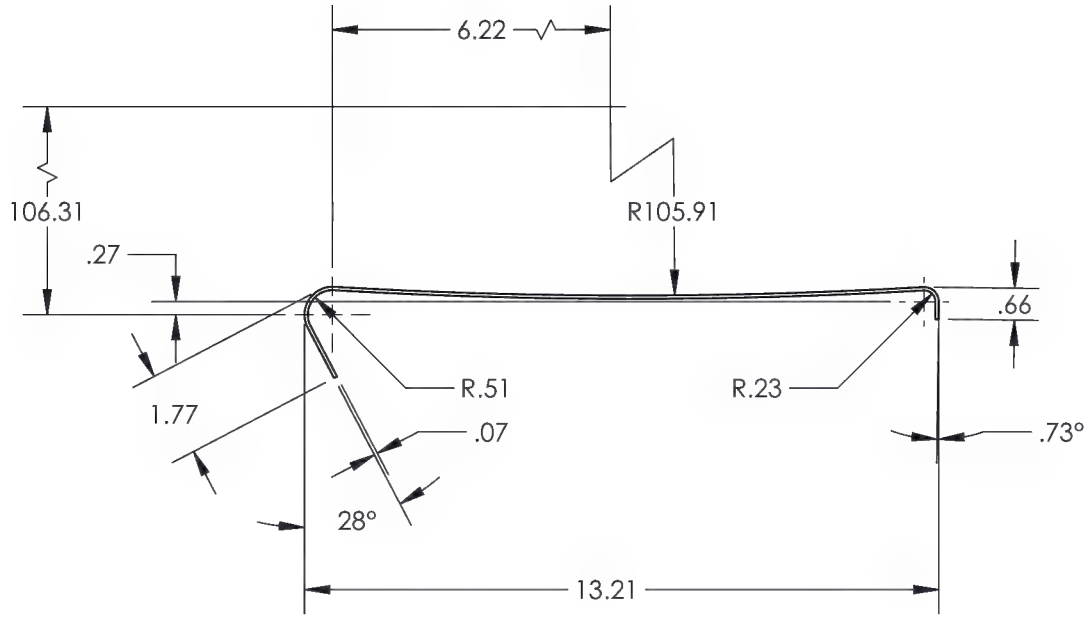
TITLE	MRB SLING
DWG NO.	RBEM621V1006101-17
REV	2
MAT'L	
HEAT TREAT	
FINISH	POWDER COAT YELLOW
SPEC	FED #13538
DRAWN BY:	DUERFELDT
CHECKED:	CLOUGH
OPPS APPR:	ANDERSON
QA APPR:	LINDSAY
APPROVED:	GILBERT
SCALE	1:5
DATE	3/3/2016
SHEET	11 OF 30

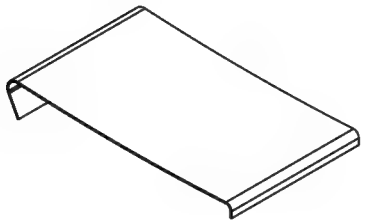
UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
.XXX ± .010 FRACTIONS ± 1/8
.XX ± .03 ANGLES ±1°
.X ± .1 SURFACES = 125

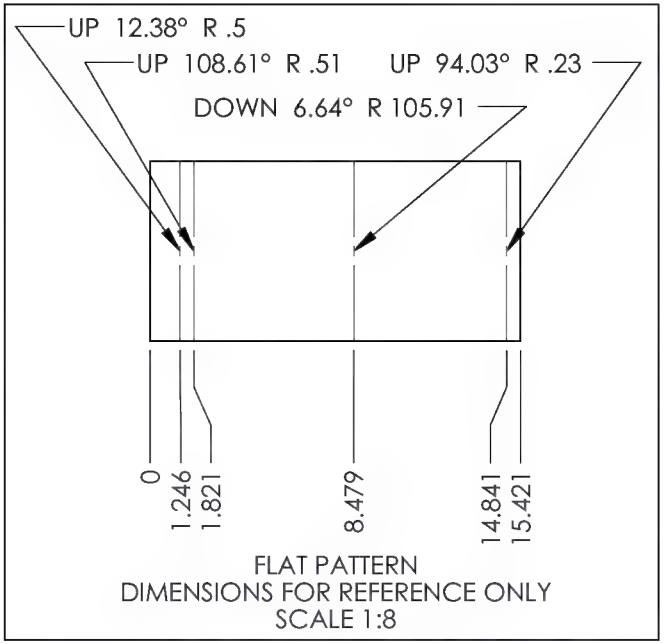
1. BREAK ALL SHARP EDGES .015 x 45° OR .015R
2. DIMENSIONAL LIMITS APPLY AFTER PLATING
3. INTERPRET DIM AND TOL PER ASME Y14.5M-2009

USED ON MODEL
H175

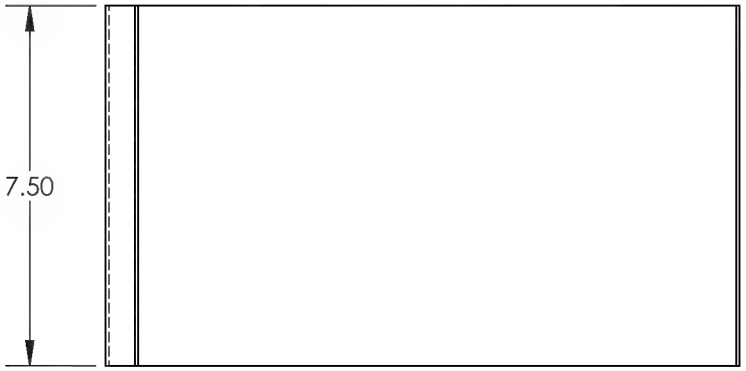
REVISIONS					
REV	ECR	DESCRIPTION	DATE	INITIAL	APPROVED







FLAT PATTERN
DIMENSIONS FOR REFERENCE ONLY
SCALE 1:8



-19

BOTTOM CLAMP

DART AEROSPACE

TITLE: MRB SLING

DWG NO. RBEM621V1006101-19 REV. 2

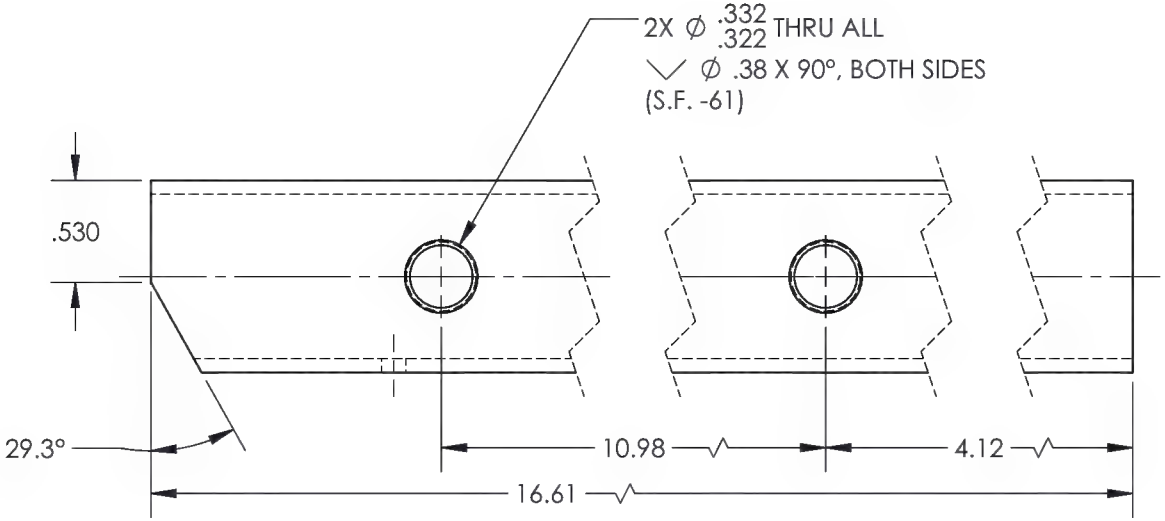
MAT'L	A36/1018/1020 HR
HEAT TREAT	
FINISH	SEE -17
SPEC	
DRAWN BY:	DUERFELDT
CHECKED:	CLOUGH
OPPS APPR:	ANDERSON
QA APPR:	LINDSAY
APPROVED:	GILBERT

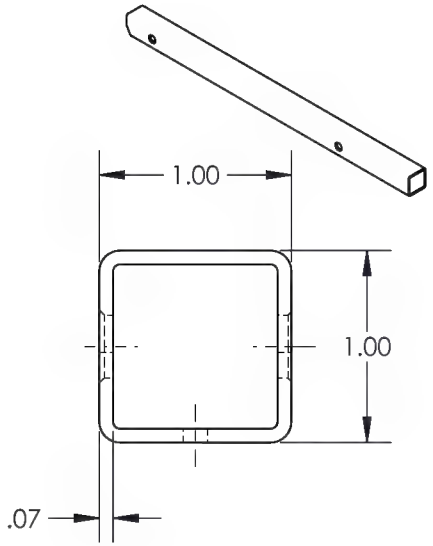
UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
.XXX ± .010 FRACTIONS ± 1/8
.XX ± .03 ANGLES ±1°
.X ± .1 SURFACES = 125
1. BREAK ALL SHARP EDGES .015 x 45° OR .015R
2. DIMENSIONAL LIMITS APPLY AFTER PLATING
3. INTERPRET DIM AND TOL PER ASME Y14.5M-2009

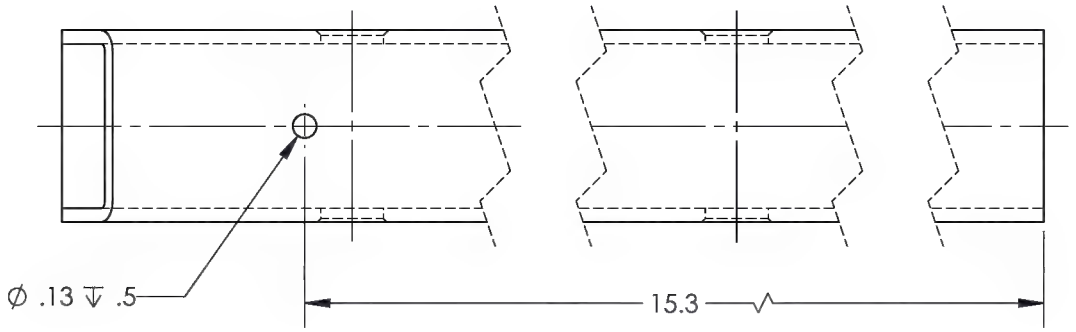
USED ON MODEL: H175

SCALE 1:4 | DATE 3/3/2016 | SHEET 12 OF 30

REVISIONS					
REV	ECR	DESCRIPTION	DATE	INITIAL	APPROVED
2	16-0147	**-21** CH'D DIMS WAS 16.64 IS 16.61, WAS 15.4 IS 15.3.	9/13/2016	DPD	JAG







(-21)

BOTTOM TUBE

DART AEROSPACE

TITLE: MRB SLING

DWG NO. RBEM621V1006101-21 REV. 2

MAT'L	STEEL TUBE
HEAT TREAT	
FINISH	SEE -17
SPEC	
DRAWN BY:	DUERFELDT
CHECKED:	CLOUGH
OPPS APPR:	ANDERSON
QA APPR:	LINDSAY
APPROVED:	GILBERT

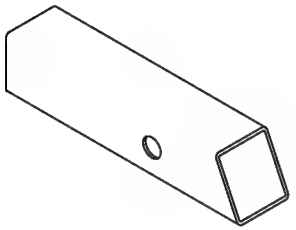
UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
.XXX ± .010 FRACTIONS ± 1/8
.XX ± .03 ANGLES ±1°
.X ± .1 SURFACES = 125

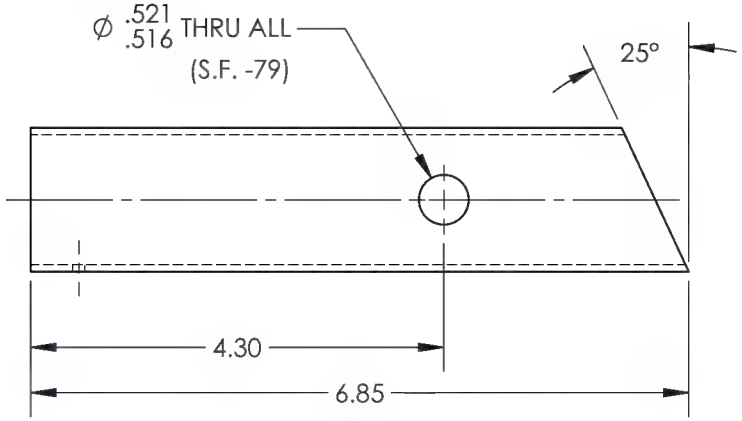
1. BREAK ALL SHARP EDGES .015 x 45° OR .015R
2. DIMENSIONAL LIMITS APPLY AFTER PLATING
3. INTERPRET DIM AND TOL PER ASME Y14.5M-2009

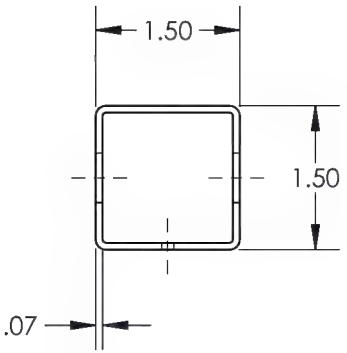
USED ON MODEL: H175

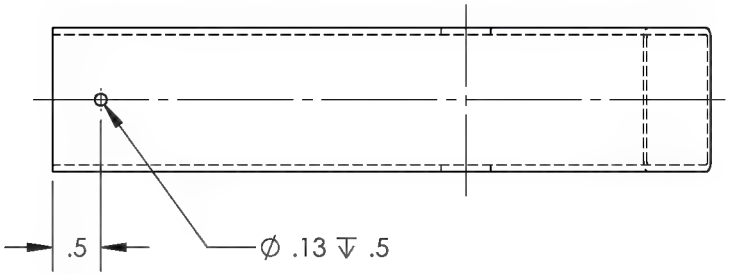
SCALE 1:1 | DATE 3/3/2016 | SHEET 13 OF 30

REVISIONS					
REV	ECR	DESCRIPTION	DATE	INITIAL	APPROVED
2	16-0147	**-23** CH'D DIM WAS Ø.526-.531 THRU ALL S.F. -79 IS Ø.516-.521 THRU ALL (S.F. -79)	9/13/2016	DPD	SM









(-23)

BOTTOM UPRIGHT TUBE

DART AEROSPACE

TITLE: MRB SLING

DWG NO. RBEM621V1006101-23 REV. 2

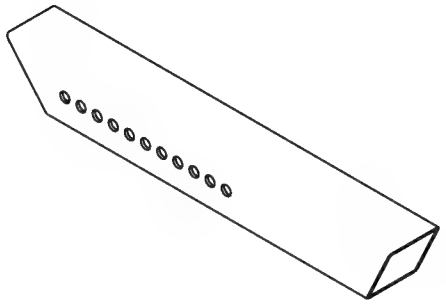
MAT'L	STEEL TUBE
HEAT TREAT	
FINISH	SEE -17
SPEC	
DRAWN BY:	DUERFELDT
CHECKED:	CLOUGH
OPPS APPR:	ANDERSON
QA APPR:	LINDSAY
APPROVED:	GILBERT

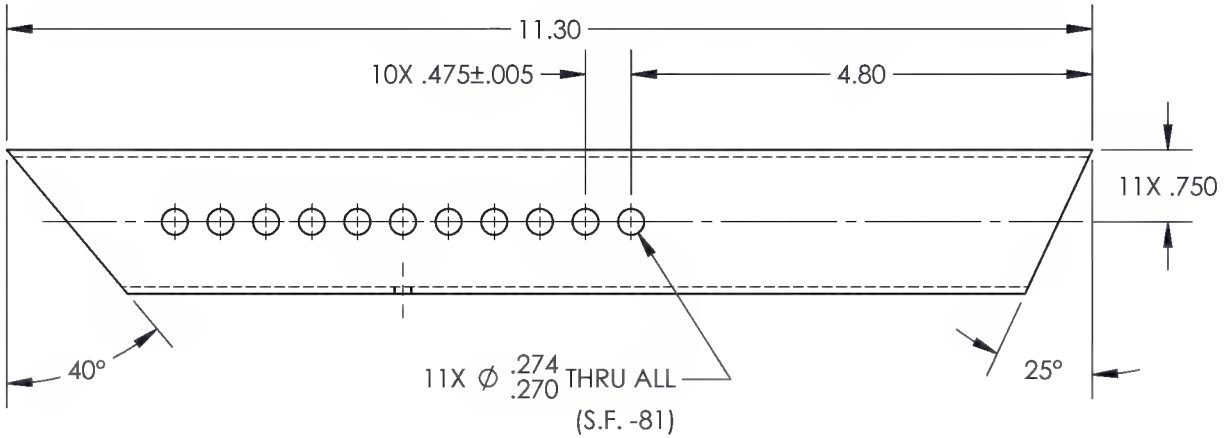
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
.XXX ± .010 FRACTIONS ± 1/8
.XX ± .03 ANGLES ±1°
.X ± .1 SURFACES = 125
1. BREAK ALL SHARP EDGES .015 x 45° OR .015R
2. DIMENSIONAL LIMITS APPLY AFTER PLATING
3. INTERPRET DIM AND TOL PER ASME Y14.5M-2009

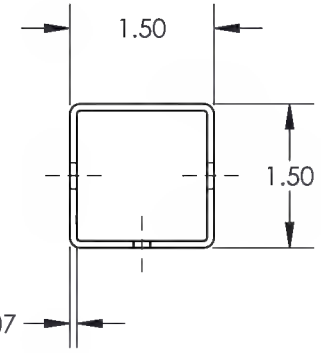
USED ON MODEL: H175

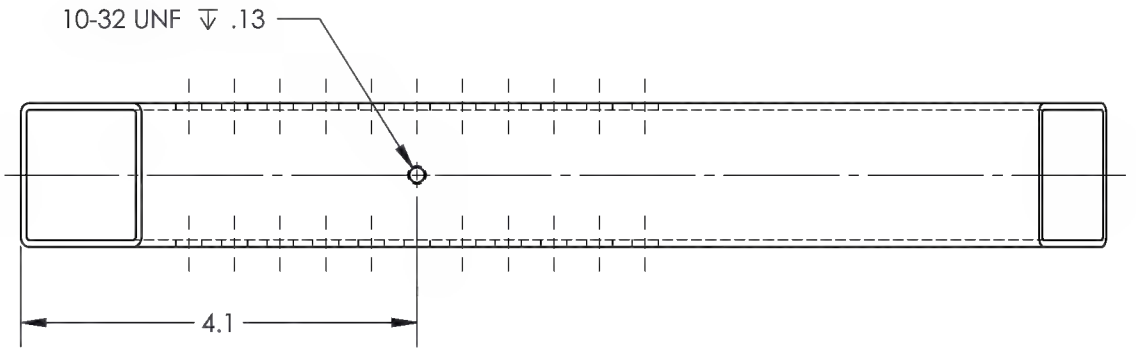
SCALE 1:2 | DATE 3/3/2016 | SHEET 14 OF 30

REVISIONS					
REV	ECR	DESCRIPTION	DATE	INITIAL	APPROVED









-25

BOTTOM ANGLE TUBE

DART AEROSPACE

TITLE: MRB SLING

DWG NO. RBEM621V1006101-25 REV. 2

MAT'L	STEEL TUBE
HEAT TREAT	
FINISH	SEE -17
SPEC	
DRAWN BY:	DUERFELDT
CHECKED:	CLOUGH
OPPS APPR:	ANDERSON
QA APPR:	LINDSAY
APPROVED:	GILBERT

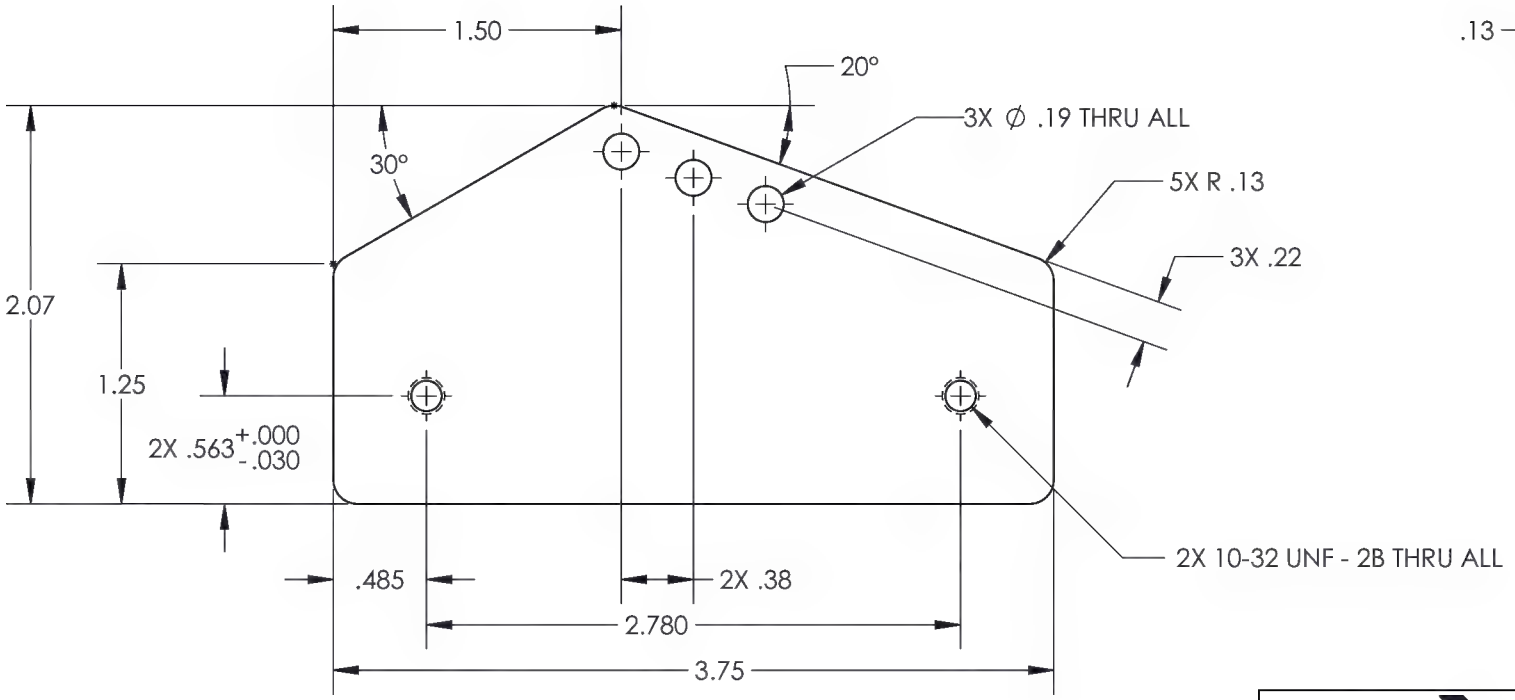
UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
.XXX ± .010 FRACTIONS ± 1/8
.XX ± .03 ANGLES ±1°
.X ± .1 SURFACES = 125

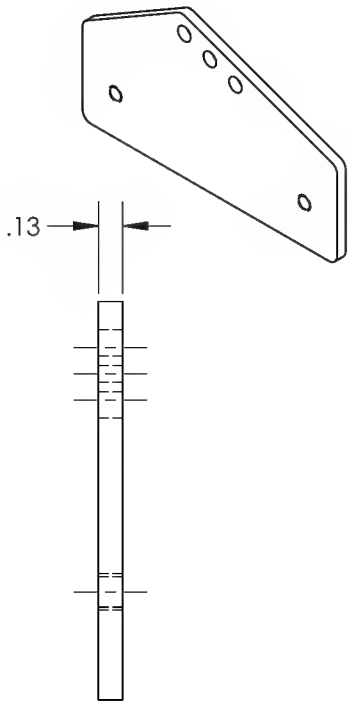
1. BREAK ALL SHARP EDGES .015 x 45° OR .015R
2. DIMENSIONAL LIMITS APPLY AFTER PLATING
3. INTERPRET DIM AND TOL PER ASME Y14.5M-2009

USED ON MODEL: H175

SCALE 1:2 | DATE 3/3/2016 | SHEET 15 OF 30

REVISIONS					
REV	ECR	DESCRIPTION	DATE	INITIAL	APPROVED





(-27)

BOTTOM SPRING ANCHOR PLATE

DART AEROSPACE

TITLE: MRB SLING

DWG NO. RBEM621V1006101-27 REV. 2

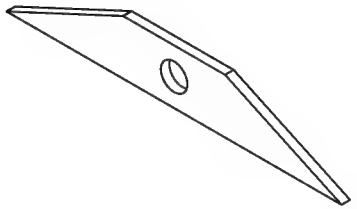
MAT'L	A36/1018/1020 HR
HEAT TREAT	
FINISH	SEE -17
SPEC	
DRAWN BY:	DUERFELDT
CHECKED:	CLOUGH
OPPS APPR:	ANDERSON
QA APPR:	LINDSAY
APPROVED:	GILBERT
SCALE	1:1
DATE	3/3/2016
SHEET	16 OF 30

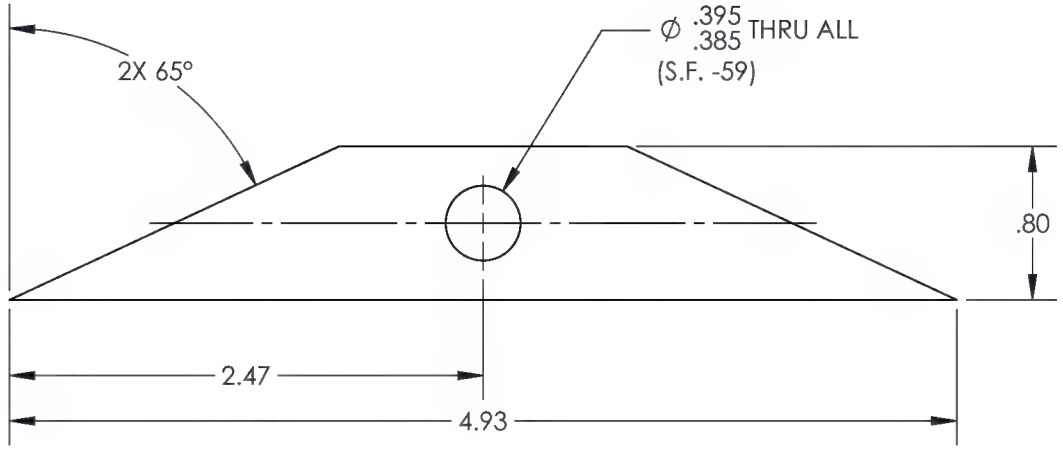
UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
.XXX ± .010 FRACTIONS ± 1/8
.XX ± .03 ANGLES ±1°
.X ± .1 SURFACES = 125

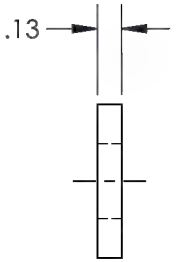
1. BREAK ALL SHARP EDGES .015 x 45° OR .015R
2. DIMENSIONAL LIMITS APPLY AFTER PLATING
3. INTERPRET DIM AND TOL PER ASME Y14.5M-2009

USED ON MODEL: H175

REVISIONS					
REV	ECR	DESCRIPTION	DATE	INITIAL	APPROVED







-29

STOP GUSSET

DART AEROSPACE

TITLE: MRB SLING

DWG NO. RBEM621V1006101-29 REV. 2

MAT'L	A36/1018/1020 HR
HEAT TREAT	
FINISH	SEE -17
SPEC	
DRAWN BY:	DUERFELDT
CHECKED:	CLOUGH
OPPS APPR:	ANDERSON
QA APPR:	LINDSAY
APPROVED:	GILBERT

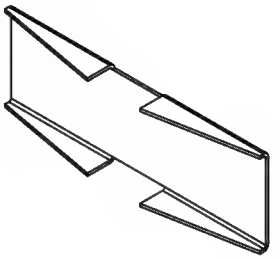
UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
.XXX ± .010 FRACTIONS ± 1/8
.XX ± .03 ANGLES ±1°
.X ± .1 SURFACES = 125

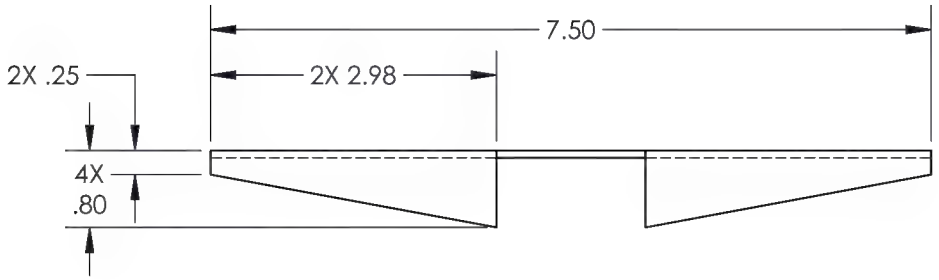
1. BREAK ALL SHARP EDGES .015 x 45° OR .015R
2. DIMENSIONAL LIMITS APPLY AFTER PLATING
3. INTERPRET DIM AND TOL PER ASME Y14.5M-2009

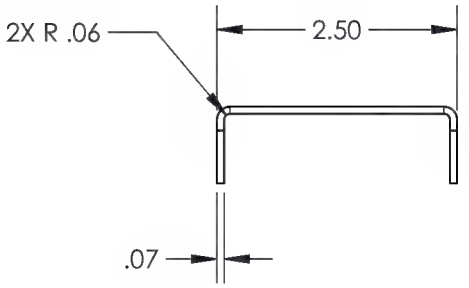
USED ON MODEL: H175

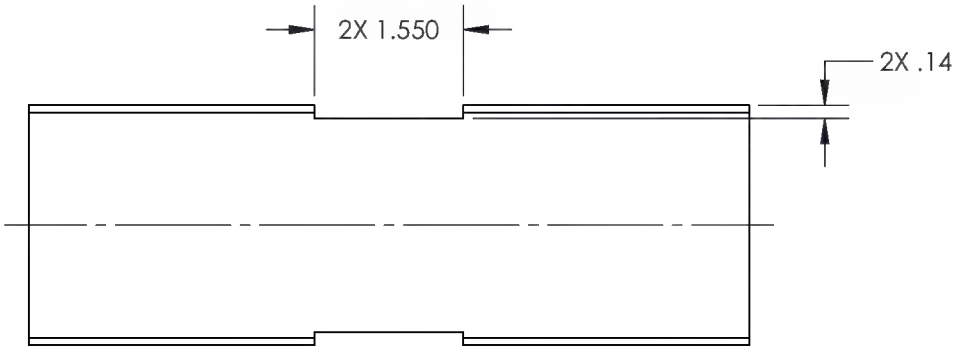
SCALE 1:1 | DATE 3/3/2016 | SHEET 17 OF 30

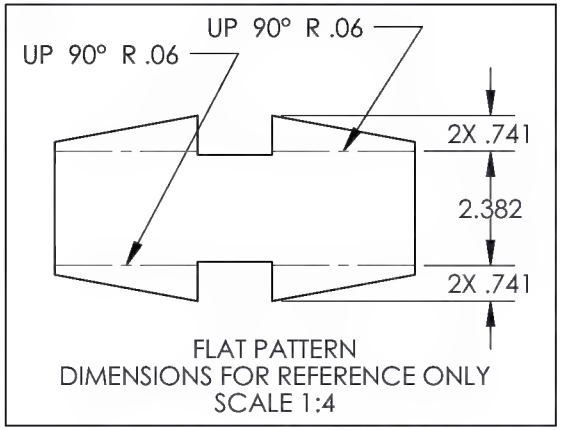
REVISIONS					
REV	ECR	DESCRIPTION	DATE	INITIAL	APPROVED











FLAT PATTERN
DIMENSIONS FOR REFERENCE ONLY
SCALE 1:4

-31

BOTTOM UPRIGHT SUPPORT

DART AEROSPACE

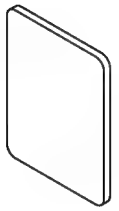
TITLE	MRB SLING
DWG NO.	RBEM621V1006101-31
REV.	2
MAT'L	A36/1018/1020 HR
HEAT TREAT	
FINISH	SEE -17
SPEC	
DRAWN BY:	DUERFELDT
CHECKED:	CLOUGH
OPPS APPR:	ANDERSON
QA APPR:	LINDSAY
APPROVED:	GILBERT
SCALE	1:2
DATE	3/3/2016
SHEET	18 OF 30

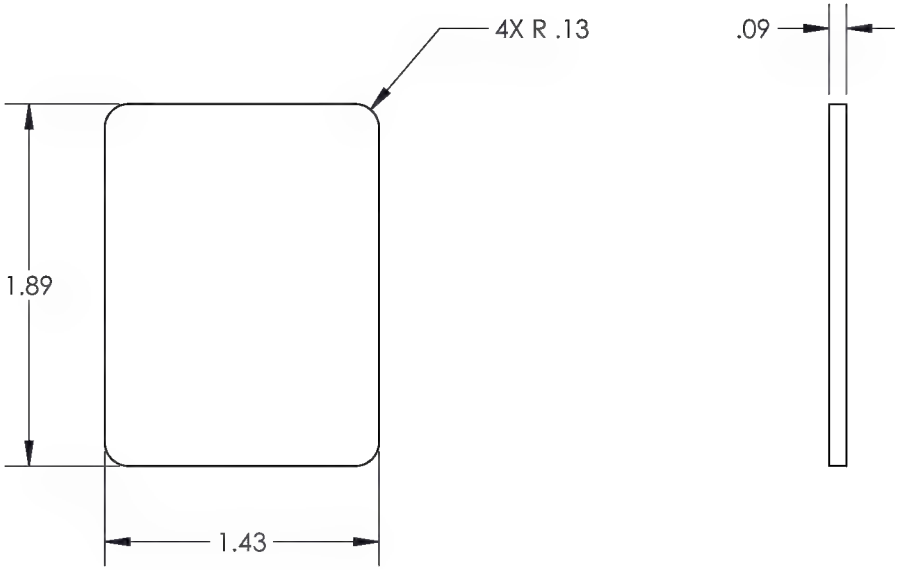
UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
.XXX ± .010 FRACTIONS ± 1/8
.XX ± .03 ANGLES ±1°
.X ± .1 SURFACES = 125

1. BREAK ALL SHARP EDGES .015 x 45° OR .015R
2. DIMENSIONAL LIMITS APPLY AFTER PLATING
3. INTERPRET DIM AND TOL PER ASME Y14.5M-2009

USED ON MODEL
H175

REVISIONS					
REV	ECR	DESCRIPTION	DATE	INITIAL	APPROVED





-33

LARGE TUBE CAP

DART AEROSPACE

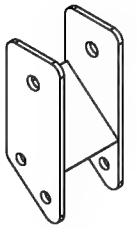
TITLE	MRB SLING
DWG NO.	RBEM621V1006101-33
REV.	2
MAT'L	A36/1018/1020 HR
HEAT TREAT	
FINISH	SEE -17
SPEC	
DRAWN BY:	DUERFELDT
CHECKED:	CLOUGH
OPPS APPR:	ANDERSON
QA APPR:	LINDSAY
APPROVED:	GILBERT
SCALE	1:1
DATE	3/3/2016
SHEET	SHEET 19 OF 30

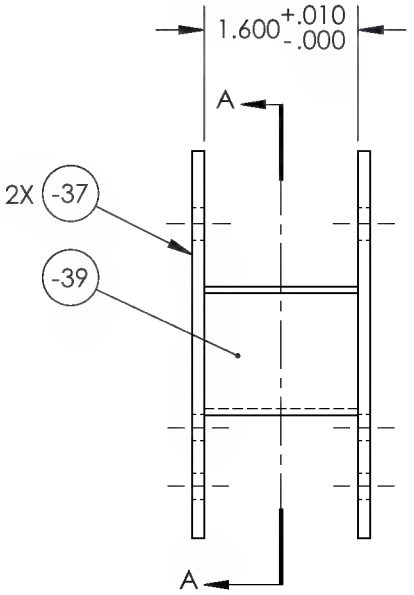
UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
.XXX ± .010 FRACTIONS ± 1/8
.XX ± .03 ANGLES ±1°
.X ± .1 SURFACES = 125

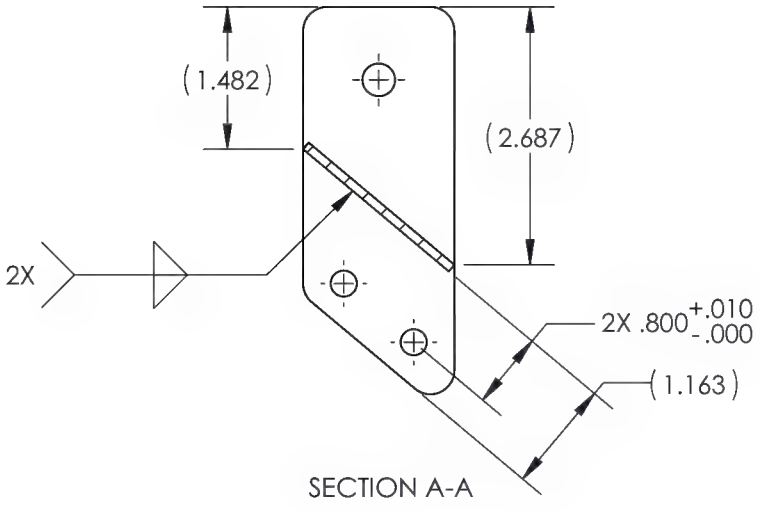
1. BREAK ALL SHARP EDGES .015 x 45° OR .015R
2. DIMENSIONAL LIMITS APPLY AFTER PLATING
3. INTERPRET DIM AND TOL PER ASME Y14.5M-2009

USED ON MODEL
H175

REVISIONS					
REV	ECR	DESCRIPTION	DATE	INITIAL	APPROVED
2	16-0147	**-35** CH'D DIM WAS .800 +.010-.000 IS 2X .800 +.010-.000.	9/13/2016	DPD	SM







SECTION A-A

-35

LIFTING BLOCK WELDMENT

DART AEROSPACE

TITLE: MRB SLING

DWG NO. RBEM621V1006101-35 REV. 2

MAT'L	
HEAT TREAT	
FINISH	POWDER COAT YELLOW
SPEC	FED #13538
DRAWN BY:	DUERFELDT
CHECKED:	CLOUGH
OPPS APPR:	ANDERSON
QA APPR:	LINDSAY
APPROVED:	GILBERT

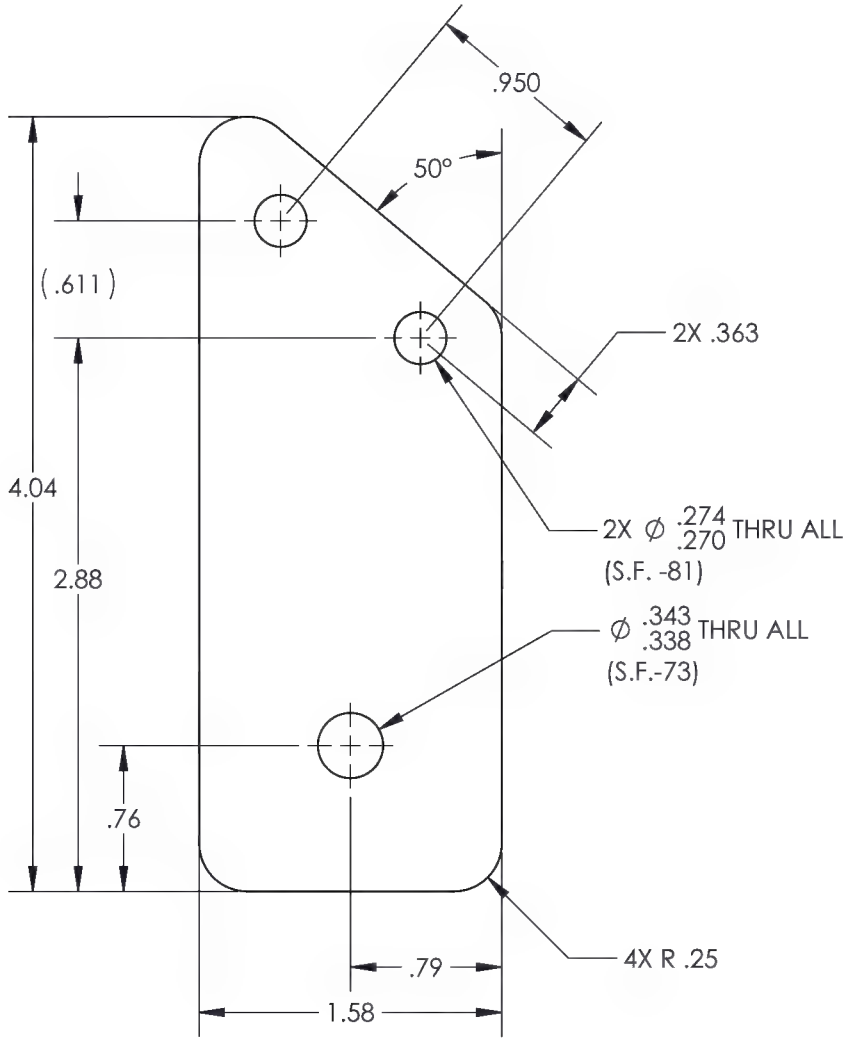
UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
.XXX ± .010 FRACTIONS ± 1/8
.XX ± .03 ANGLES ±1°
.X ± .1 SURFACES = 125

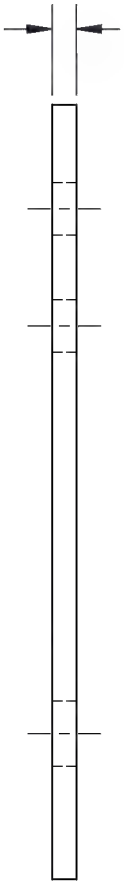
1. BREAK ALL SHARP EDGES .015 x 45° OR .015R
2. DIMENSIONAL LIMITS APPLY AFTER PLATING
3. INTERPRET DIM AND TOL PER ASME Y14.5M-2009

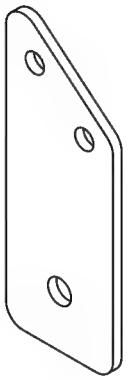
USED ON MODEL: H175

SCALE 1:2 | DATE 3/3/2016 | SHEET 20 OF 30

REVISIONS					
REV	ECR	DESCRIPTION	DATE	INITIAL	APPROVED
2	16-0147	**-37** CH'D DIMS WAS .57 IS .76, WAS Ø.275-.280 THRU ALL S.F. -73 IS Ø.338-.343 THRU ALL (S.F. -73).	9/13/2016	DPD	SM







(-37)

LIFTING BLOCK PLATE

DART AEROSPACE

TITLE: MRB SLING

DWG NO. RBEM621V1006101-37 REV 2

MAT'L	1018/1020 CR
HEAT TREAT	
FINISH	SEE -35
SPEC	
DRAWN BY:	DUERFELDT
CHECKED:	CLOUGH
OPPS APPR:	ANDERSON
QA APPR:	LINDSAY
APPROVED:	GILBERT

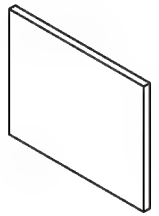
UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
.XXX ± .005 FRACTIONS ± 1/8
.XX ± .01 ANGLES ±.5°
.X ± .1 SURFACES = 125

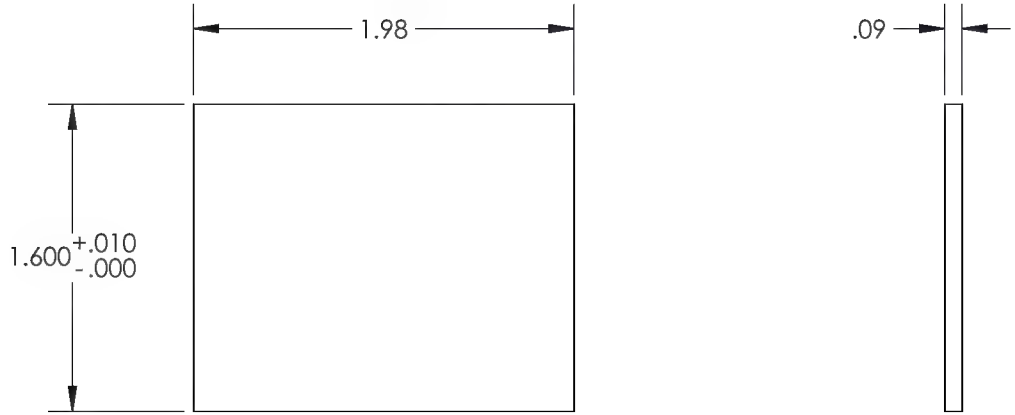
1. BREAK ALL SHARP EDGES .015 x 45° OR .015R
2. DIMENSIONAL LIMITS APPLY AFTER PLATING
3. INTERPRET DIM AND TOL PER ASME Y14.5M-2009

USED ON MODEL: H175

SCALE 1:1 | DATE 3/3/2016 | SHEET 21 OF 30

REVISIONS					
REV	ECR	DESCRIPTION	DATE	INITIAL	APPROVED





(-39)

LIFTING BLOCK SPACER

DART AEROSPACE

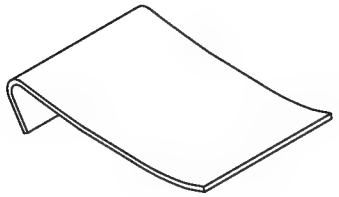
TITLE	MRB SLING
DWG NO.	RBEM621V1006101-39
REV.	2
MAT'L	1018/1020 CR
HEAT TREAT	
FINISH	SEE -35
SPEC	
DRAWN BY:	DUERFELDT
CHECKED:	CLOUGH
OPPS APPR:	ANDERSON
QA APPR:	LINDSAY
APPROVED:	GILBERT
SCALE	1:1
DATE	3/3/2016
SHEET	SHEET 22 OF 30

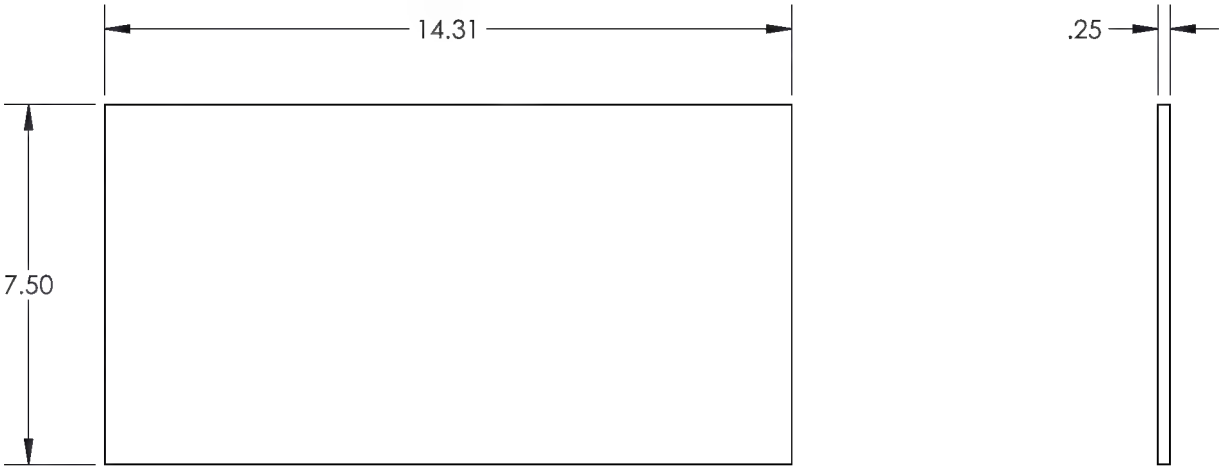
UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
.XXX ± .010 FRACTIONS ± 1/8
.XX ± .03 ANGLES ±1°
.X ± .1 SURFACES = 125

1. BREAK ALL SHARP EDGES .015 x 45° OR .015R
2. DIMENSIONAL LIMITS APPLY AFTER PLATING
3. INTERPRET DIM AND TOL PER ASME Y14.5M-2009

USED ON MODEL
H175

REVISIONS					
REV	ECR	DESCRIPTION	DATE	INITIAL	APPROVED





-41

TOP CLAMP PAD

DART AEROSPACE

TITLE: MRB SLING

DWG NO. RBEM621V1006101-41 REV. 2

MAT'L	NEOPRENE/EPDM/SBR FOAM
HEAT TREAT	
FINISH	
SPEC	
DRAWN BY:	DUERFELDT
CHECKED:	CLOUGH
OPPS APPR:	ANDERSON
QA APPR:	LINDSAY
APPROVED:	GILBERT

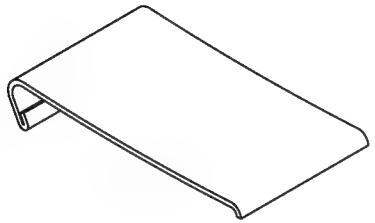
UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
.XXX ± .010 FRACTIONS ± 1/8
.XX ± .03 ANGLES ±1°
.X ± .1 SURFACES = 125

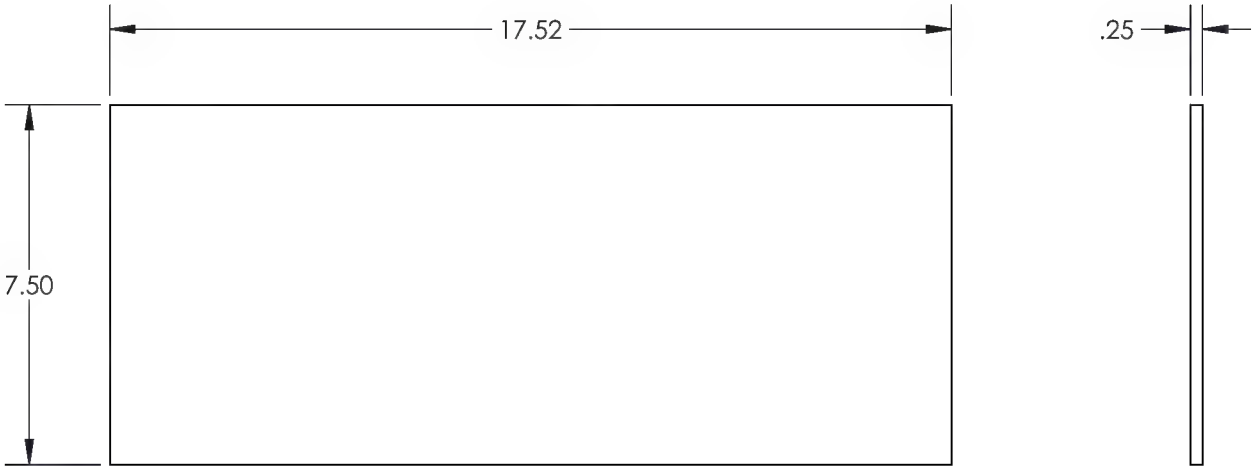
1. BREAK ALL SHARP EDGES .015 x 45° OR .015R
2. DIMENSIONAL LIMITS APPLY AFTER PLATING
3. INTERPRET DIM AND TOL PER ASME Y14.5M-2009

USED ON MODEL: H175

SCALE 1:4 | DATE 3/3/2016 | SHEET 23 OF 30

REVISIONS					
REV	ECR	DESCRIPTION	DATE	INITIAL	APPROVED





(-43)

BOTTOM CLAMP PAD

DART AEROSPACE

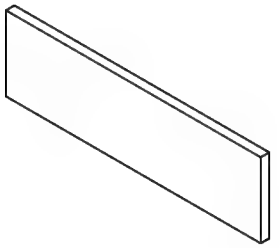
TITLE	MRB SLING
DWG NO.	RBEM621V1006101-43
REV.	2
MAT'L	NEOPRENE/EPDM/SBR FOAM
HEAT TREAT	
FINISH	
SPEC	
DRAWN BY:	DUERFELDT
CHECKED:	CLOUGH
OPPS APPR:	ANDERSON
QA APPR:	LINDSAY
APPROVED:	GILBERT
SCALE	1:4
DATE	3/3/2016
SHEET	24 OF 30

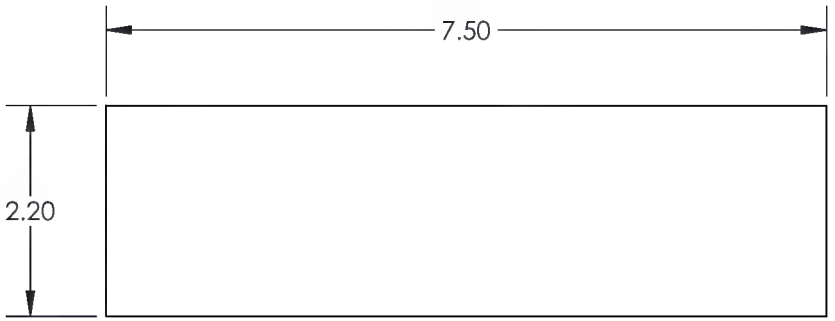
UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
.XXX ± .010 FRACTIONS ± 1/8
.XX ± .03 ANGLES ±1°
.X ± .1 SURFACES = 125

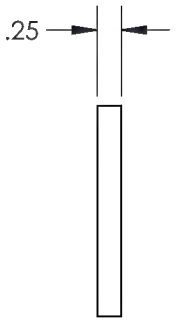
1. BREAK ALL SHARP EDGES .015 x 45° OR .015R
2. DIMENSIONAL LIMITS APPLY AFTER PLATING
3. INTERPRET DIM AND TOL PER ASME Y14.5M-2009

USED ON MODEL
H175

REVISIONS					
REV	ECR	DESCRIPTION	DATE	INITIAL	APPROVED







-45

BACK FOAM PAD

DART AEROSPACE

TITLE: MRB SLING

DWG NO. RBEM621V1006101-45 REV. 2

MAT'L	NEOPRENE/EPDM/SBR FOAM
HEAT TREAT	
FINISH	
SPEC	
DRAWN BY:	DUERFELDT
CHECKED:	CLOUGH
OPPS APPR:	ANDERSON
QA APPR:	LINDSAY
APPROVED:	GILBERT

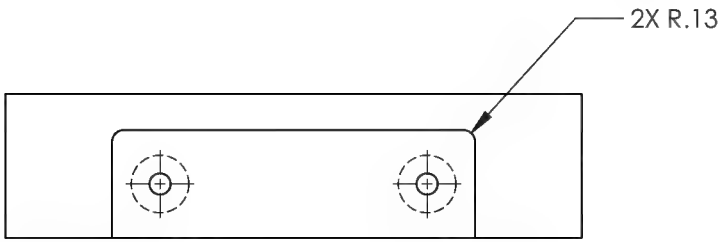
UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
.XXX ± .010 FRACTIONS ± 1/8
.XX ± .03 ANGLES ±1°
.X ± .1 SURFACES = 125

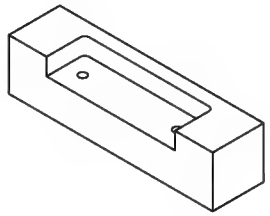
1. BREAK ALL SHARP EDGES .015 x 45° OR .015R
2. DIMENSIONAL LIMITS APPLY AFTER PLATING
3. INTERPRET DIM AND TOL PER ASME Y14.5M-2009

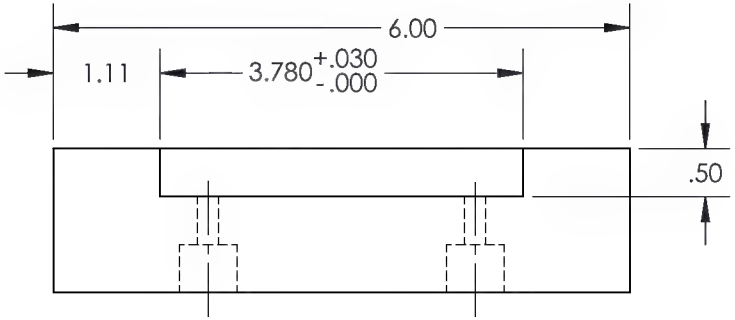
USED ON MODEL: H175

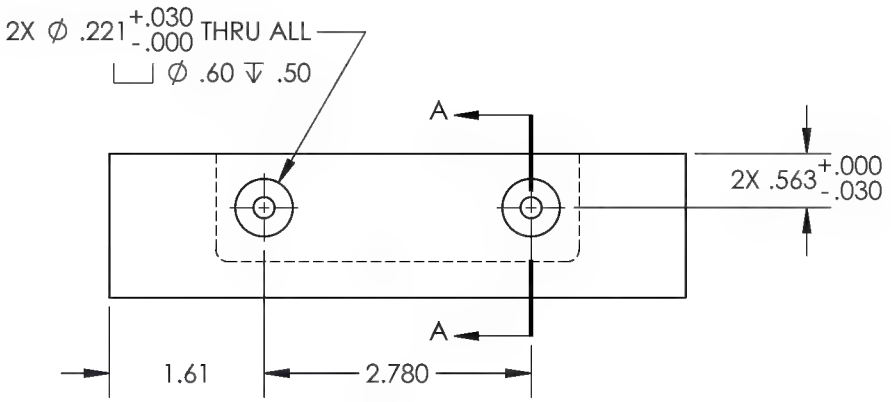
SCALE 1:2 | DATE 3/3/2016 | SHEET 25 OF 30

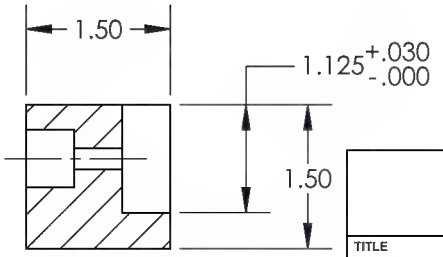
REVISIONS					
REV	ECR	DESCRIPTION	DATE	INITIAL	APPROVED
2	16-0147	**-47** ADDED DIM 2X R.13.	9/13/2016	DPD	SM











SECTION A-A

(-47)

REAR BUMPER

DART AEROSPACE

TITLE: MRB SLING

DWG NO. RBEM621V1006101-47 REV. 2

MAT'L	URETHANE, 60A
HEAT TREAT	
FINISH	
SPEC	
DRAWN BY:	DUERFELDT
CHECKED:	CLOUGH
OPPS APPR:	ANDERSON
QA APPR:	LINDSAY
APPROVED:	GILBERT

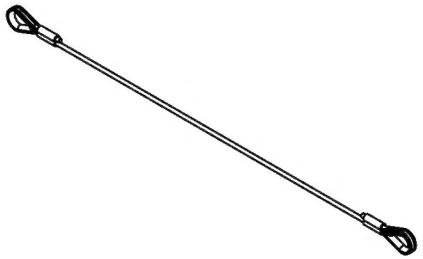
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
.XXX ± .010 FRACTIONS ± 1/8
.XX ± .03 ANGLES ±1°
.X ± .1 SURFACES = 125

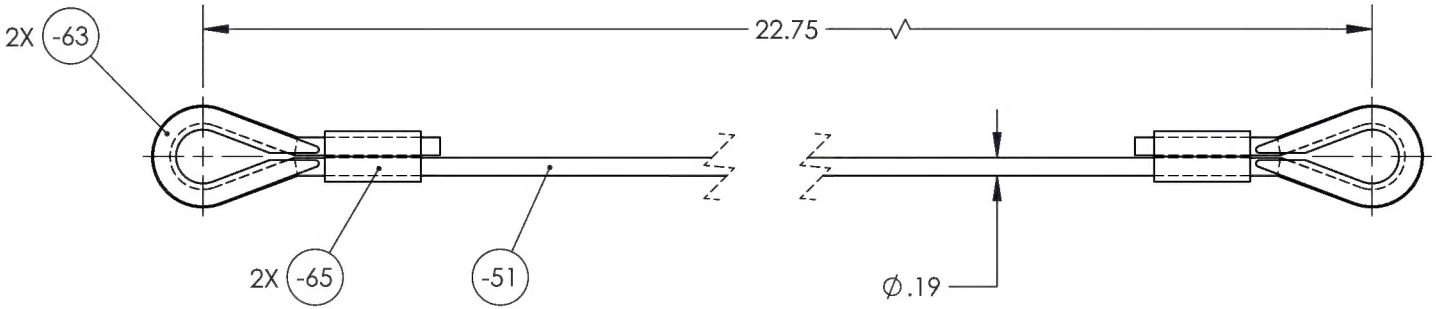
1. BREAK ALL SHARP EDGES .015 x 45° OR .015R
2. DIMENSIONAL LIMITS APPLY AFTER PLATING
3. INTERPRET DIM AND TOL PER ASME Y14.5M-2009

USED ON MODEL: H175

SCALE 1:2 | DATE 3/3/2016 | SHEET 26 OF 30

REVISIONS					
REV	ECR	DESCRIPTION	DATE	INITIAL	APPROVED





-49

LIFTING CABLE ASSEMBLY

DART AEROSPACE

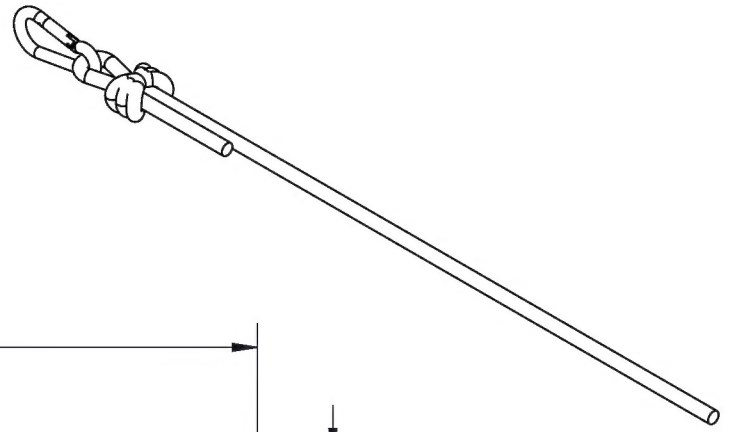
TITLE	MRB SLING
DWG NO.	RBEM621V1006101-49
REV.	2
MAT'L	
HEAT TREAT	
FINISH	
SPEC	
DRAWN BY:	DUERFELDT
CHECKED:	CLOUGH
OPPS APPR:	ANDERSON
QA APPR:	LINDSAY
APPROVED:	GILBERT
SCALE	1:2
DATE	3/3/2016
SHEET	SHEET 27 OF 30

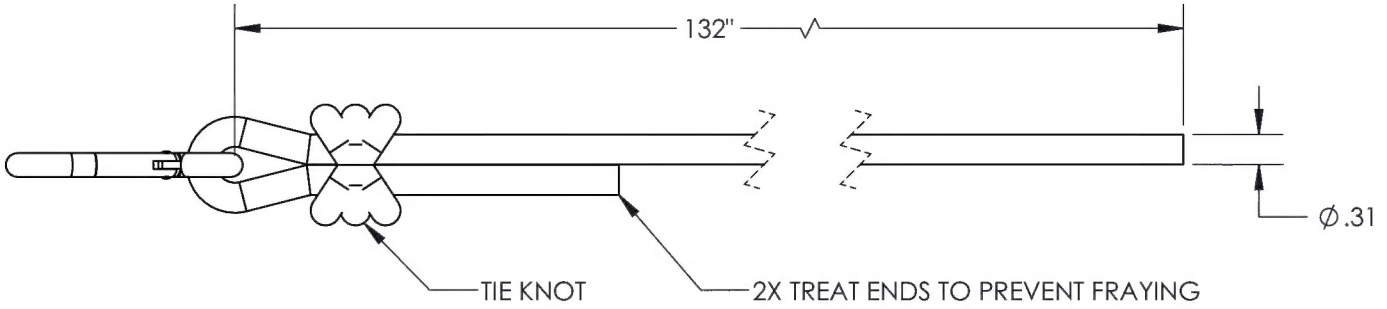
UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
.XXX ± .010 FRACTIONS ± 1/8
.XX ± .03 ANGLES ±1°
.X ± .1 SURFACES = 125

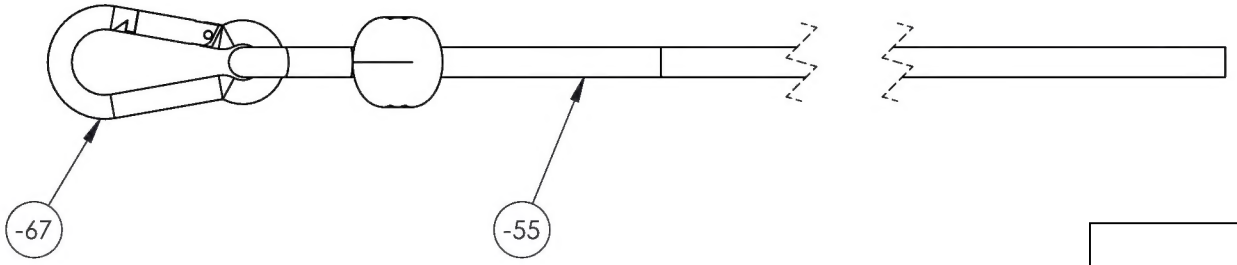
1. BREAK ALL SHARP EDGES .015 x 45° OR .015R
2. DIMENSIONAL LIMITS APPLY AFTER PLATING
3. INTERPRET DIM AND TOL PER ASME Y14.5M-2009

USED ON MODEL
H175

REVISIONS					
REV	ECR	DESCRIPTION	DATE	INITIAL	APPROVED







(-53)

ROPE & CARABINER ASSEMBLY

DART AEROSPACE

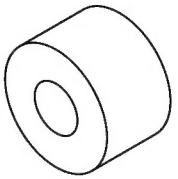
TITLE	MRB SLING
DWG NO.	RBEM621V1006101-53
REV.	2
MAT'L	
HEAT TREAT	
FINISH	
SPEC	
DRAWN BY:	DUERFELDT
CHECKED:	CLOUGH
OPPS APPR:	ANDERSON
QA APPR:	LINDSAY
APPROVED:	GILBERT
SCALE	1:2
DATE	3/3/2016
SHEET	28 OF 30

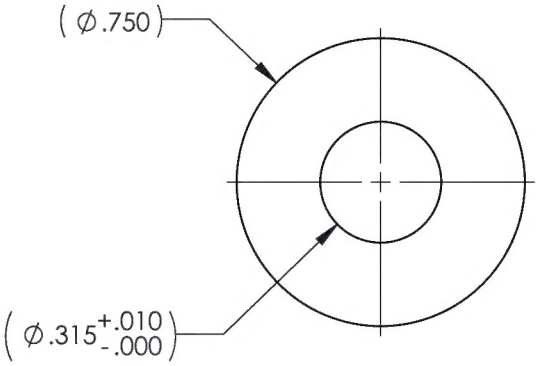
UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
.XXX ± .010 FRACTIONS ± 1/8
.XX ± .03 ANGLES ±1°
.X ± .1 SURFACES = 125

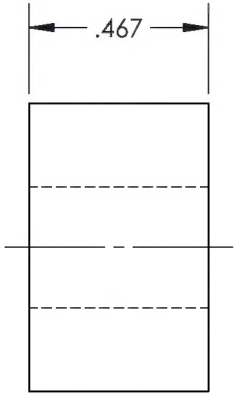
1. BREAK ALL SHARP EDGES .015 x 45° OR .015R
2. DIMENSIONAL LIMITS APPLY AFTER PLATING
3. INTERPRET DIM AND TOL PER ASME Y14.5M-2009

USED ON MODEL
H175

REVISIONS					
REV	ECR	DESCRIPTION	DATE	INITIAL	APPROVED
2	16-0147	**-57** CH'D DIMS WAS (Ø.625) IS (Ø.750), WAS (Ø.252 +.010-.000) IS (Ø.315 +.010-.000), WAS .537 IS .467.	9/13/2016	DPD	SM







-57

SPACER

DART AEROSPACE

TITLE: MRB SLING

DWG NO. RBEM621V1006101-57 REV 2

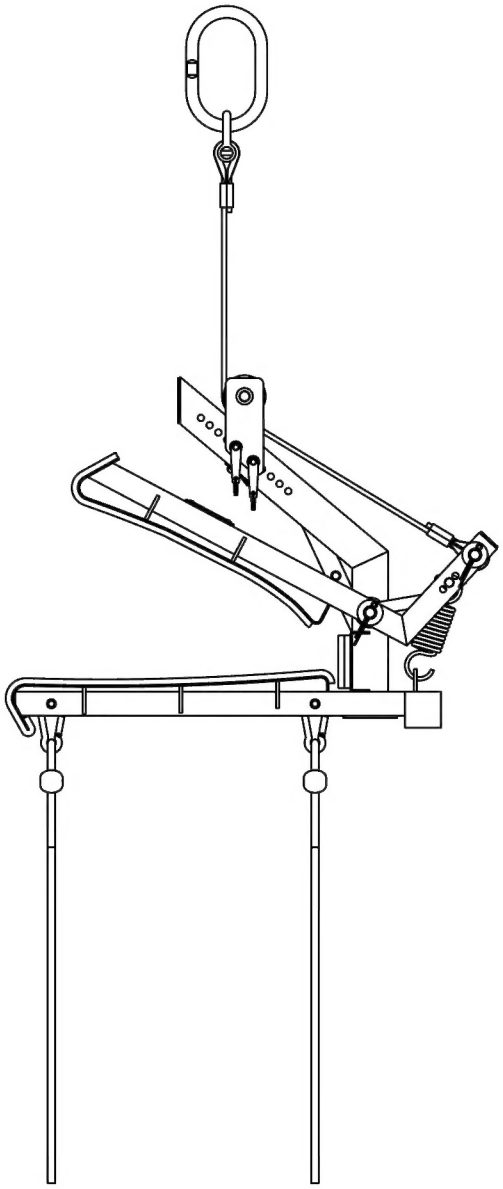
MAT'L	S.S.
HEAT TREAT	
FINISH	
SPEC	
DRAWN BY:	DUERFELDT
CHECKED:	CLOUGH
OPPS APPR:	ANDERSON
QA APPR:	LINDSAY
APPROVED:	GILBERT

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
.XXX ± .005 FRACTIONS ± 1/8
.XX ± .01 ANGLES ±.5°
.X ± .1 SURFACES = 125

1. BREAK ALL SHARP EDGES .015 x 45° OR .015R
2. DIMENSIONAL LIMITS APPLY AFTER PLATING
3. INTERPRET DIM AND TOL PER ASME Y14.5M-2009

USED ON MODEL: H175

SCALE 2:1 | DATE 3/3/2016 | SHEET 29 OF 30



FIRST ARTICLE WEIGHT TEST

INSPECTION & TESTING PROCEDURES FOR THE RBEM621V1006101, MRB SLING.
THIS ASSEMBLY IS DESIGNED TO LIFT A MAIN ROTOR BLADE.
THIS ASSEMBLY SHOULD BE INSPECTED BEFORE EACH USE.
REPLACE ANY ITEMS THAT ARE DAMAGED OR SUSPECTED OF DAMAGE BEFORE USING!

FIRST ARTICLE WEIGHT TEST

1. AFTER INSPECTION, PLACE 330 LBS. IN MRB SLING. LIFT MRB SLING USING AN APPROPRIATE LIFTING DEVICE, FOR AT LEAST 5 MINUTES, CONTINUALLY CHECKING FOR CRACKS, DEFLECTION, OR DISTORTION.
3. REMOVE WEIGHT AND RE-INSPECT TOOL, CHECKING FOR STRESS CRACKS, BENDING, OR DISTORTIONS.

INSPECTOR:_____

TESTER:_____

S.N.:_____

DATE:_____

DART AEROSPACE
190 S. Danebo Ave., Eugene, OR. 97402
1-800-556-4166
e-mail: sales@dartaero.com
dartaerospace.com

TITLE: MRB SLING			
DWG NO. RBEM621V1006101	REV 2	CUSTOMER 1 OF 1	
SCALE 1:8	DATE 3/3/2016	SHEET 30 OF 30	